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HYGEIA

THE HEALTH MAGAZINE

PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION

DECEMBER, 1930 25 CENTS

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HYGEIA

THE HEALTH MAGAZINE

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Contributors to This Issue

After nearly fifty years as a pediatrician, DR. HENRY DWIGHT CHAPIN retains undimmed his interest in the welfare of children wherever he finds them.

Varied subjects engage the attention of DR. LOUIS SCHWARTZ in his work as surgeon of the U. S. Public Health Service. His article on blood is a by-product of his work in an investigation of radium dial painting now being conducted by the service.

RUTH LINDQUIST'S practical article on home management was first written as an address which she presented at the 1930 session of the American Home Economics Association in Denver. The succeeding article comes from a specialist in the same field. DORIS MCCRAY, a consultant in home economics, herself tried out the recipes she gives for using dried fruits.

DR. HENRY PLEASANTS, JR., concludes this month his two-part story of the work of the sanitary squads of the U. S. Army in France. BERENICE LOWE, as a doctor's wife, has no doubt observed actual experiences as a basis for her story of the child with diabetes.

DR. JOHN H. EVANS has been for many years a distinguished student in the field of anesthesia.

DR. L. L. MCCOY in his practice as an ophthalmologist has often encountered the confusion in terms that he seeks to correct. DR. WENDELL C. PHILLIPS has long had an interest in problems of the deafened and was the founder of the American Federation of Organizations for the Hard of Hearing. He is a former president of the American Medical Association.

With this issue ends DR. B. C. H. HARVEY'S varied and infinitely painstaking series of articles on the anatomy of the human body, which have extended through the past two years. DON CHALMERS LYONS, who diagnoses the emotional difficulties of the unwilling child patient, is a dentist. MARGUERITE GODE'S stories and poems for children have been popular in HYGEIA for several years. GRACE ELLEN GLAUBITZ has contributed several groups of poems to HYGEIA. DOROTHY E. BRESNAHAN is an instructor in the Chicago Normal College.

THE 1930 INDEX

An index and title page for the 1930 volume of HYGEIA *is on the press and will be sent to any subscriber on request. Address The Editor,* HYGEIA, *535 North Dearborn Street, Chicago.*

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CHRISTMAS - 1930

WHAT to give for Christmas? What a question! It brings a picture of thousands of women rushing frantically in and out of department stores and gift shops, of tired business men getting more tired as they work at Christmas lists, of little boys and girls working up letters addressed to "Dear Santa Claus," and of older boys and girls trying to find something to please peculiar tastes. The spiritual value of the holiday season declines while the material aspects get more and more emphasis.

François Villon, poverty-stricken scamp of Paris, in his testament willed to the poor the patience to endure; to his friends and to many of his enemies he gave satirical gifts emphasizing their weaknesses. Today any one with a sense of wit and diplomacy can see to it that the proper notions fall on fertile soil, and thereby be able to say on Christmas Day that the things he received were just what he wanted.

There are so many things a parent can give to a child that will mean much for his happiness in the future. He may give him good food in abundance, plenty of outdoor air, the glory of the sunlight and the thrill of play and sport. He may provide in the home an atmosphere of inspiration, books to read that rejoice and yet guide the developing mind, music that thrills instead of that which degrades. The father and mother may give to the child, above all, companionship in great measure—not the strict discipline composed largely of admonitions and forbiddance, but the companionship that means a mutual division of interest and thought.

THE leader of the family, of the community or of office and factory may give to those about him inspiration. He may remember the soft answer that "turneth away wrath" and the encouragement that inspires employees to suggestions. He may remind himself that the modulated voice means restraint and that sympathy leads to contentment. How little do many executives realize that all about are persons with personal problems that modify their actions—a mother or sister sick at home, the sudden loss of accumulated savings, or personal disturbances of health. Such hidden causes may be responsible for errors in actions, apparent stupidity or infractions of office or factory codes that are fully excusable when all of the circumstances are understood.

It is not possible for every parent to give to his child the heredity and constitution that are associated with strength, growth and perfect health. All of us are the sum of many generations of human beings. It is possible, however, for every one who is intelligent to apply to his life the knowledge that science has bestowed on mankind for the development of the soundest and sturdiest bodies compatible with the material we have. For this, only knowledge and intelligence are required. The knowledge is available for any one who has the intelligence to seek it. Can there be any more useful gift than the gift of such knowledge?

IN THIS season, more than in any other, the minds of men are turned to the problem of making the most out of human existence. Modern civilization has centered the minds of men on the pleasures that come from accessories to nature. Radios, motor cars, movies and similar devices seem to be necessary to happiness. In a document, no doubt anonymous, one Charles Lounsbury gave as a last will and testament the beauties of nature and companionship. He said:

I give to good fathers and mothers, in trust for their children, all good little words of praise and encouragement, and all quaint pet names and endearments, and I charge said parents to use them justly and generously, as the needs of their children may require.

I leave to children inclusively, but only for the term of their childhood, all and every, the flowers of the fields, and the blossoms of the woods, with the right to play among them freely according to the customs of children, warning them at the same time against thistles and thorns. And I devise to children the banks of the brooks, and the golden sands beneath the waters thereof and the odors of the willows that dip therein, and the white clouds that float high over the giant trees.

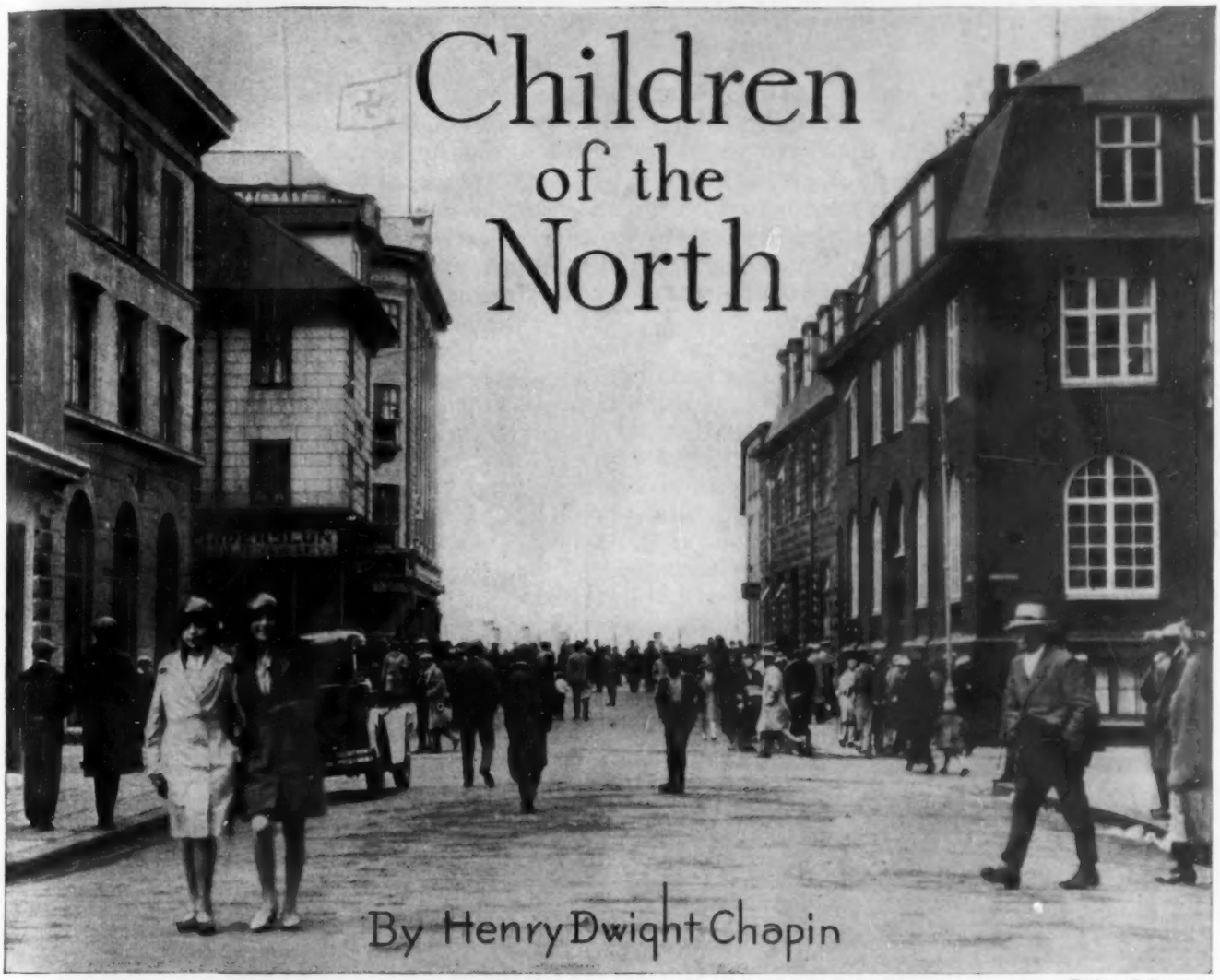
I devise to boys jointly all the useful, idle fields and commons where ball may be played; all pleasant waters where one may swim; all snowclad hills where one may coast, and all streams and ponds where one may fish, or where when grim winter comes, one may skate; to have and to hold the same for the period of their boyhood. And all meadows with the clover blossoms and butterflies thereof, the woods and their appurtenances, the squirrels and birds, and echoes and strange noises, and all distant places which may be visited, together with the adventures there found.

To lovers, I devise their imaginary world with whatever they may need; as the stars of the sky; the red roses by the wall; the bloom of the hawthorn; the sweet strains of music, and aught else by which they may desire to figure to each other the lastingness and beauty of their love.

To young men jointly, I devise and bequeath all boisterous, inspiring sports and rivalry, and I give them the disdain of weakness and undaunted confidence in their own strength, though they are rude; I give them power of making lasting friendships, and of possessing companions, and to them exclusively I give all merry songs and brave choruses, to sing with lusty voices.

And to those who are no longer children or youths or lovers, I leave the memory, and I bequeath to them the volumes of the poems of Burns and Shakespeare and of other poets, if there be others, to the end that they may live over the old days again, freely and fully, without tithe or diminution.

To our loved ones with snowy crowns I bequeath the happiness of old age, the love and gratitude of the children until they fall asleep.



Children of the North

By Henry Dwight Chapin

Ewing Galloway

The main street of Reykjavik, a quaint and cleanly city.

LAST summer the eyes of the world were turned toward an island of the far North —Iceland. There, one thousand years ago, the first parliament was formed—the Althing—and many nations sent representatives to help celebrate the great event in history.

There is much in that latitude, however, to interest one besides political events past and present. On a recent trip to the North Cape and the Scandinavian countries, I made some notes as to the condition of child life instead of hunting polar bears, which apparently have migrated to more northern regions. After all, children are more interesting products of a country than birds or bears, although the latter frequently get the most notice.

After crossing the North Atlantic, our first sight of Iceland showed a long, low coast on one side and hills on the other. Upon entering a wide inlet from the sea, the hills looked bare but were tipped by a beautiful blue tint. A little farther back were mountains with streaks of snow on the sides and the tops completely hidden by clouds.

We landed at Reykjavik early in the evening and the brightness of the sun gave no evidence of night. A crowd lined the landing stage and a swarm of curious children were well in the foreground. The light was bright until 11, when the sun dropped down on the horizon; a full moon shining at the same time gave a weird effect. The next day we wandered about the town, which is quaint and clean. Much building was going on, largely of reinforced concrete, although the older houses are of corrugated iron or of wood. Many of the windows were decorated with window boxes gay with flowers. It was a surprise to see flowers in Iceland; although the northern point of the island reaches the Arctic Circle and is washed by an Arctic current, the south and west coasts are touched by the Gulf Stream. This accounts for the grasses and heather and wild flowers, although there are few trees. The climate in the lowlands is relatively mild in summer.

It was a pleasure to see the husky-looking children with their light hair and red cheeks, running about and enjoying the sight of strangers. Years ago there was much sickness and a high infant mortality in Iceland, but this is a thing of the past owing to improved dwellings with good hygienic and medical oversight. The health officer gave me a five year report on the public health in Iceland showing an average birth rate of 26.2 per thousand and a death rate of 13.5. The most remarkable showing was in infant mortality—52.3 per thousand, which is about the lowest in Europe.

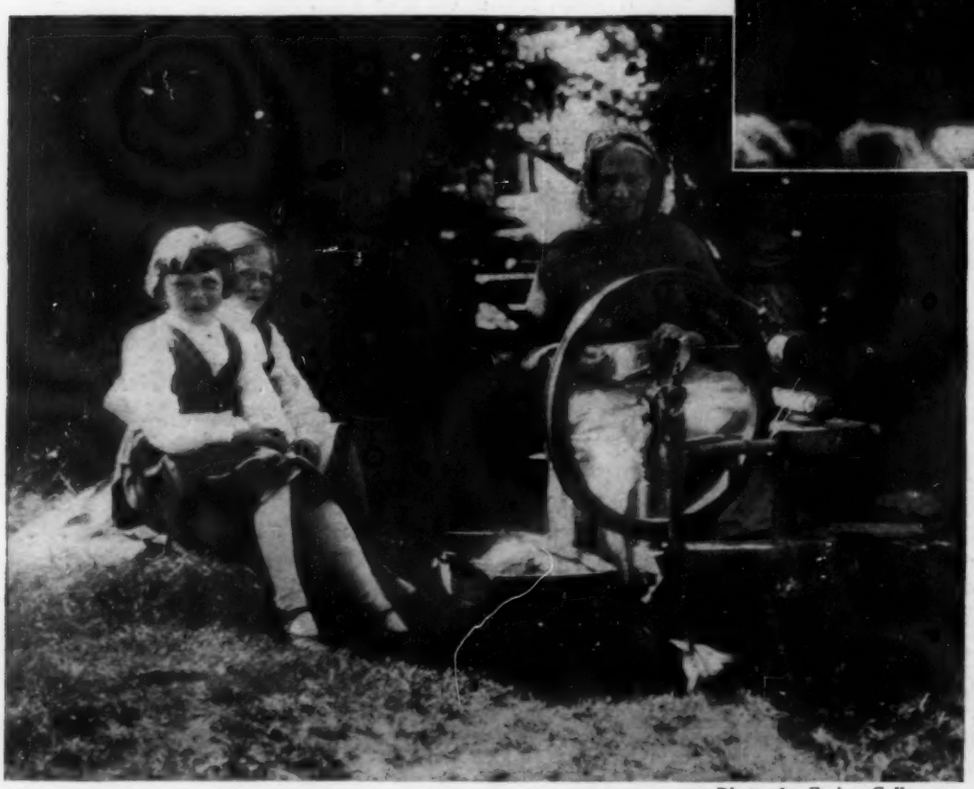
One of the most important factors in this result is that most mothers nurse their babies. In Reykjavik 95.4 per cent of infants were breast fed and 75.8 in the country districts. An investigation by the Icelandic Medical Society showed that about 60 per cent of the babies were breast fed for more than three months.

Formerly there was a great deal of tuberculosis on the island but it is now diminishing. Another influence for health is doubtless the prolonged daily sunshine, which in summer reaches twenty hours. Ultraviolet radiation is active until 9 p. m., while in most parts of the world it ceases many hours earlier. The purity and clearness of the air favor the full effect of the sunshine. The climate is also dry, with little humidity and plenty of ozone in the air from the sea.

A drive to a fishing village some miles over the hills showed lonely-looking farm houses with workers gathering hay. The soil is largely composed of volcanic lava with many small and large rocks scattered over the surface. A few cows were seen; they were healthy looking but the thin grass did not afford good forage. On the plains the grass is greener and more abundant than on the hills and wild flowers are fairly abundant. It was interesting to see the little Icelandic ponies with flowing tails scampering over the hills. On reaching the village, we were welcomed by a group of chubby children collected just outside a shed piled up with dried fish; everywhere large masses of cod were being assorted in preparation for export.

On the way back, we stopped at one of the boiling springs that serve as a laundry for the neighborhood. In order to prevent women and children from falling in and being scalded, the water is covered with bars. Formerly without

A Lapp madonna, carrying her baby in a laced basket.



Clean and robust, these little Norwegian girls watch their grandmother at her spinning wheel.

Photos by Ewing Galloway

this protection children were sometimes severely or fatally burned.

As we left the island, a crowd collected at the landing stage to see us off and our last sight of Reykjavik was a group of children waving us a friendly farewell.

Our course up the coast showed a chain of mountains covered with snow, with immense glaciers in the notches between the mountains. This part of the island well corresponds to its name—Iceland.

Our next stop was at Hammerfest—at the top of the world—as it is the northernmost town on the globe, being quite near the bleak North Cape. The town is surrounded by hills covered by coarse, green grass but no trees were seen. It is a quaint place with wooden shops and warehouses, although quite modern in respect to telephones and electric lights, the latter being necessary during the night of winter, which lasts two months.

The usual groups of sturdy children eyed us curiously. At one stop a pretty little girl in new peasant costume handed us a bouquet of wild flowers. It was a pleasure to meet these bright and friendly children, so interested in travelers.

Our course then took us down the rugged coast of Norway with its marvelous fjords, and we stopped at various places along the way. At Lyngen Fjord we visited a colony of nomad Lapps who came there for summer trading with tourists. They were a picturesque but dirty lot, living in tents and mud houses. The children looked healthy but did not appear so alert and intelligent as the Norwegian children; it was interesting to see them roaming around surrounded by a herd of reindeer or peeking out of dugouts.

At Copenhagen the health officer told me many interesting points in reference to the public health and especially that of children. Practically all public health affairs, which were formerly scattered under several departments, are now established under a new Ministry of Health, one of the branches of which concerns itself with child welfare.

Infant mortality, which was formerly high, has been reduced by a little more than one half in the last decades, but it is still not as low as in parts of the United States. Most mothers in Denmark are able and willing to nurse their babies. There is now a law that nursing moth-

Ewing Galloway

Beautiful children and beautiful scenery at Merok village on Geirangerfiord, Norway.

William Thompson

Children of reindeer herders, these Lapp boys do not lack fresh air and exercise. Proper diet and cleanliness are more difficult to achieve. Their home is a house made of sod and birchpoles.

Ewing Galloway

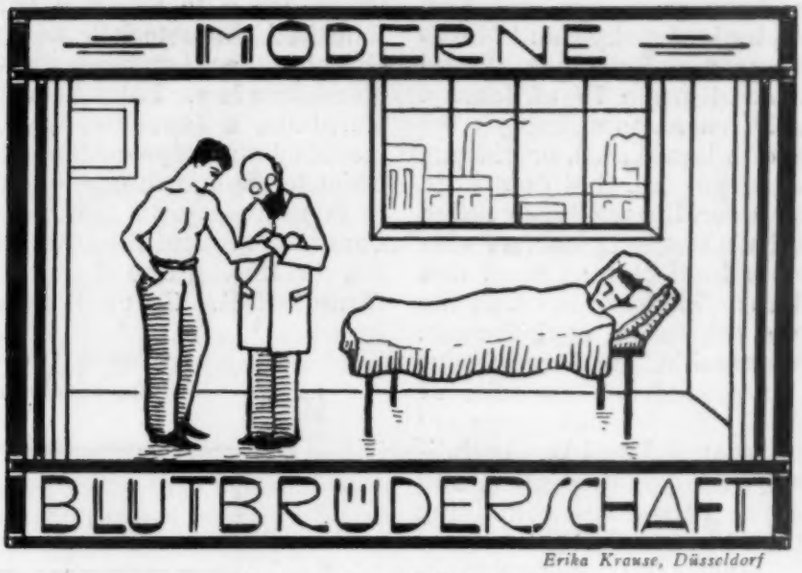
ers must be supported by the state for about two months in cases of necessity. Many of the large factories have special rooms in which babies can be brought to be nursed by working mothers and there is an agitation to compel all factories to provide this feature. There is little rickets and a low tuberculosis mortality in the country.

At Stockholm I was able to secure some data as to conditions in Sweden. Infant mortality is low, the last figure I was able to secure being 56.2. The measures to attain this result consist chiefly of educational work with regard to the care of healthy and sick children, hygiene, the education of midwives and the establishment and improvement of social welfare institutions in general. Dependent children as well as numerous other problems relating to child welfare are provided for by law. As far as possible the children are boarded out in families, this being generally considered the most suitable method of taking care of healthy and normal children in Sweden. The supervisory function is carried out by members of a child welfare board, the law requiring each parish to have such a board. In the larger cities this work is carried out by salaried officers appointed for this purpose, who act on behalf of the boards.

These northern countries have taken an advanced stand in respect to the difficult and perplexing problems of the illegitimate child. Infants born out of wedlock reach from 3 to 12 per cent of all births in civilized countries.

In Norway, the legal status of such a child is the same in relation to the father as to the mother. Efforts are made to establish the paternity of the child as far as the state can accomplish this, and as a result 40 per cent of these children in Norway receive support from their fathers. In Sweden, there is an Illegitimate Children's Act, which provides that every such child shall have a person especially appointed to look after his welfare. The duty of such a person is to assist the mother with advice and information and see that the child's rights are duly protected and his maintenance assured. Such an individual retains his position as a rule until the child has reached the age of 18. In Sweden, the king, the Riksdag and the legislative authorities have always taken great interest in social problems.

It seems that the little children of the North are generally well looked after, as evidenced by the healthy and happy appearance of most of them. In my wanderings around the world I have seen many wretched, underprivileged children without any proper support or oversight, but I carried away a happy impression of what I saw in these northern countries.



Erika Krause, Düsseldorf

Modern blood brotherhood.

Full-Blooded Donors

By Louis Schwartz

A NEW calling has been evolved by modern medicine for healthy, full-blooded young men and women. This is the occupation of professional blood donor. There are many diseases in the course of which the patient is benefited or his life is prolonged or even saved by receiving a blood transfusion; that is, by having put into his veins some of the blood of a suitable healthy individual. The person giving the blood is called the donor and the one receiving it is called the recipient. Such transfusions are often required during the course of or immediately after a surgical operation.

The blood transfused not only acts as the patient's own blood, in the matter of supplying oxygen to his tissues, but it also acts as a stimulant to the blood-making organs of the patient, causing them to produce more blood, and in some cases of diseases caused by specific germs, it may actually destroy the germs and antidote their poisons.

Recruited from All Classes

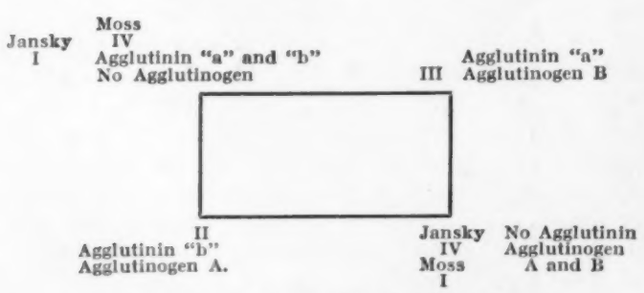
The professional donor is recruited from all classes and occupations; from the college student to the drifter, and in Europe women are included among them. A large hospital usually has a list of such donors on whom they call when blood for transfusion is needed. Before a professional donor can have his name placed on the hospital list, he must submit to an examination. This examination determines whether or not he is free from disease and has normal blood and whether or not the giving of blood will injure him. The Wassermann test is included in this examination. If he successfully passes the examination, the blood group to which he belongs is determined and his name is listed. In order to remain on this list, the professional donor must submit to examination at least once a month.

Blood Groups

In the old days it was noted by physicians that in many cases in which transfusion was done, the patient instead of benefiting from the operation was made worse by it. Experimenters along this line discovered that the blood of certain individuals mixed well with the blood of some other individuals but agglutinated or clumped the blood cells of certain others. Continued experimentation along this line showed that human blood was divided into four groups. None of these groups mixes well with any of the others but each group mixes well with blood belonging to the same group. Landsteiner, Jansky and Moss, working independently of

one another, made these groupings and they do not exactly correspond. Jansky's and Moss's groupings are most frequently used. Blood group I of Moss is blood group IV of Jansky. Blood group II and III correspond.

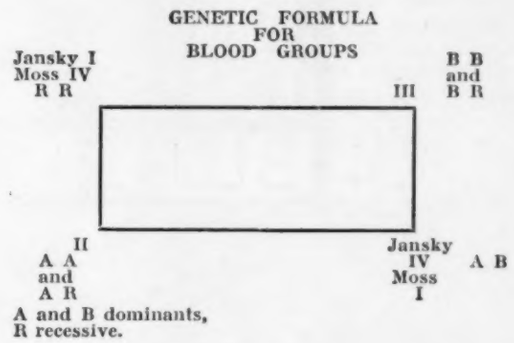
The blood consists of a liquid part, or plasma, and the red cells, or corpuscles, that float in it. The plasma contains a certain substance called agglutinin, which when it comes in contact with corpuscles of a certain kind clumps them and impairs their usefulness. The corpuscles on the other hand contain a substance, agglutinogen, that renders them clumpable. The agglutinins are of two kinds, designated for the sake of simplicity "a" and "b." The agglutinogens are also of two kinds, designated A and B. Agglutinin "a" can combine with agglutinogen A and cause clumping of the corpuscles containing agglutinogen A, but it will not affect the corpuscles containing agglutinogen B, while agglutinin "b" will combine with corpuscles containing agglutinogen B but will not affect corpuscles containing agglutinogen A. It is evident that normal blood from any one individual cannot contain at one and the same time corresponding agglutinin and agglutinogen because if it did the corpuscles would be automatically clumped and useless. There are exceedingly rare cases in which the blood of an individual clumps its own corpuscles but this occurs only outside the body and when the blood is cooled to temperatures far below that of the body. The blood in each of these four groups contains a combination of agglutinin and agglutinogen different from the combination in any of the other groups, but the same combination always exists in the same blood group. There can be no agglutination, except in rare instances, between the blood of individuals in the same group.



About 44 per cent of all blood belongs to Group I.
About 41 per cent of all blood belongs to Group II.
About 11 per cent of all blood belongs to Group III.
About 4 per cent of all blood belongs to Group IV.

Blood Groups Are Inherited

The blood group to which a person belongs does not become fully established until after the third year of life, but after that it remains the same throughout life. Some instances have been recorded in which an individual who had withstood an attack of a severe infection or had had a blood transfusion, had his blood group changed, but such cases are rare indeed. The blood group to which a person belongs is an inherited characteristic and was first shown by Ottenberg, an American physician, to follow the Mendelian law. Later Bernstein, a German, and Furuhata, a Japanese, working independently, modified and improved on Ottenberg's work. In order to explain that blood groups are inherited, it is necessary to assume three factors, two dominants A and B and a recessive R. According to this, group I Jansky has the genetic formula R R. Group II may consist of A A or



A R. Group III may consist of B B or B R, and group IV of A B.

Starting from this hypothesis, it is possible to foretell the blood groups to which children from certain matings will belong. For instance, if both parents belong to blood group I, the children will belong to blood group I. It is also possible definitely to state that certain given matings can never produce offspring belonging to certain blood groups. For instance, unions between blood groups I and IV cannot produce offspring belonging to blood group I.

Identifying Mixed Infants

Looking at it from another angle, it can be stated that children belonging to certain blood groups can only have parents belonging to certain blood groups and not to others. For instance, if the child belongs to blood group I, neither of the parents can belong to blood group IV. Or if the child belongs to blood group IV, neither of the parents can belong to blood group I.

Then again, if the blood groups to which a child and one parent belong are known, it can, in some instances, be definitely stated that the other parent must belong to one of certain groups but cannot belong to a certain other group. For instance, if a child belongs to blood group II, and the mother belongs to blood group I, then the father cannot belong to blood group III. However, if a child belongs to blood group II and the mother also belongs to blood group II, then the father may belong to any group. Many other combinations can be foretold or shown to be impossible and, as a result, these blood groupings may, in some cases, be utilized medicolegally to determine illegitimacy. Paternity cannot be proved but the

impossibility of being the parent of a child in question can, in some instances, be established. The test may also be used in some cases to identify infants who have been inadvertently or purposely mixed.

Any one capable of performing accurate agglutination tests can perform these tests for paternity, and when the matter is clearly explained, the man is usually willing to submit to the test because it cannot incriminate him (because even though he may belong to the necessary blood group, yet he is not the only member of that blood group) and it may exonerate him.

Transfusion Procedure

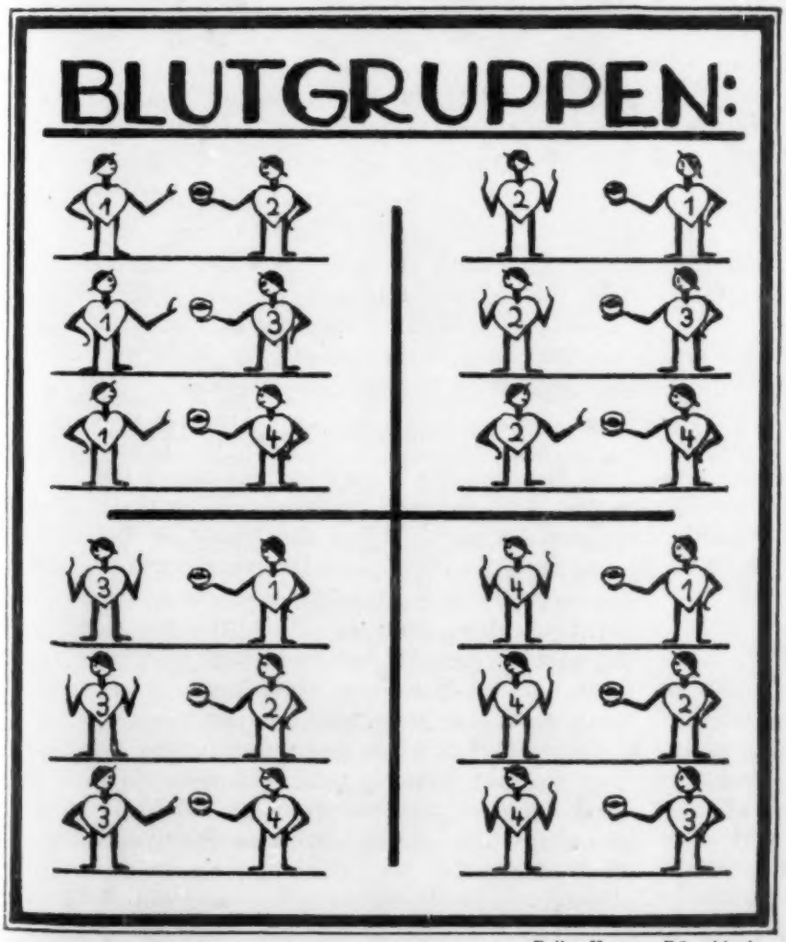
When a physician decides that a transfusion is necessary, he first determines to which blood group the patient belongs. This is a simple test and can be done in a few minutes.

Usually a friend or relative volunteers to be a donor and then the physician examines him to determine whether he is physically fit and can give the blood without serious detriment to himself. If he is fit, then his blood group is determined, and if it is the same as the patient's, he is permitted to become the donor.

It is best for donors to be of the same blood group as recipients, but when such a donor cannot be found, a donor belonging to Jansky blood group I may be used for any recipient if the transfusion is very slowly given. The reason for this can be seen by referring to the table. It is that there being no agglutinogen in the donor's corpuscles they cannot be clumped by the recipient's agglutinins, while the agglutinins which are present in the plasma of the donor are so greatly diluted by the patient's blood, if the transfusion is slowly given, that their power of agglutination is lost before they can injure the recipient's corpuscles.

On the other hand, a patient belonging to Jansky blood group IV may, if a blood group IV donor cannot be found, receive blood from any donor if the transfusion is very slowly given. Because of the fact that there is no agglutinin in the plasma of the recipient it cannot clump the corpuscles of any donor and the agglutinin that may be present in the plasma of the donor is so diluted, if the transfusion is slowly given, that it loses the power to clump the agglutinogen-containing corpuscles of the recipient.

Recently some subgroups have been discovered but no mistake can be made if the precaution of matching the donor's and recipient's blood is always taken before the transfusion is done.



Erika Krause, Düsseldorf

Those in group I can receive blood from all the blood groups; those in group IV can give to all the blood groups; those in groups II and III cannot give to or receive from each other.

If none of the volunteers are suitable as donors, then the professional donor belonging to the proper blood group is sent for. Just before the transfusion, the donor's blood is always tested directly against the patient's so that there is no chance of a mistake in having the bloods incompatible.

The patient and donor are placed on separate tables, alongside of each other, with the heads lying in opposite directions and the physician standing between the two tables. This brings the left arm of the donor to the left arm of the recipient. No anesthetic is used. The blood is usually taken from the vein of the donor at the bend of the elbow and pumped into a similar vein of the recipient. Usually from 500 cc., or one pint, to 1,000 cc. is transfused. The operation is usually a simple one and often the patient and the donor watch the course of the transfusion, during the course of which they sometimes converse with each other.

I know of a professional donor, a young Irishman, rather inclined to be lazy, whose main source of income is from transfusions. He gives blood about once a month, and as

the fee is $50 for 500 cc., he manages to get along without doing much other work. On one occasion he was called to give blood to a well-to-do Hebrew who was ill with blood poisoning. The patient was fully conscious and conversed with the young Irishman to whom he expressed his gratefulness. During the course of the conversation, the young Irishman remarked that he was descended from the kings of Ireland. The patient recovered and ever since then, to the astonishment of his hearers, he boasts of having in his veins the blood of Irish kings.

Blood tests were used to determine parentage in the recent Chicago baby mix-up.

Another donor, after receiving $100 for giving 1,000 cc. of blood, remarked that now he could pay his passage back to Sweden, there to lay claim to his inheritance to a title of nobility. Some members of the fallen Russian aristocracy have earned money as donors and many a patient who has had a transfusion, if he only knew it, could boast of having royal blood in his veins.

Donor Suffers No Ill Effects

A properly selected donor suffers no ill effects from a transfusion, and usually in a month's time completely recovers from the effects of it. However, it is not wise to give blood regularly once a month for a long time because the blood-making organs may become so exhausted that permanent harm may result to the donor.

It has been found that transfusions given in certain instances to patients suffering from a disease caused by germs, as pneumonia, resulted in the patient's rapid recovery. Further investigation showed that the reason for this was that the blood of the donor destroyed the germs causing the disease or acted as an antidote for the poisons generated by the germs causing the disease. The donor's blood contained certain specific antibodies against the disease from which the patient was suffering. In other words, the donor was immune to this disease. It has long been known that an attack of certain diseases renders the patient immune for a variable length of time to those diseases and that the blood contains the substance which causes the immunity and that this immune blood can be used with benefit in treating others suffering with the specific disease.

Use of Blood in Treating Diseases

In the past few years human blood has begun to be used in the treatment of certain germ-caused diseases. Thus the blood of those who have recently recovered from infantile paralysis has been used with some success in the treatment of this disease. Recently the blood of those who have recovered from psittacosis, or parrot fever, has been used in the treatment of those suffering with this disease.

Experiments have been conducted to immunize human beings, who volunteered for this work, against certain diseases, with the object of using their blood serum in the treatment of these diseases. So far these experiments have met with only indifferent success, but if further experimentation along this line gives more success, then it will not only benefit mankind but will enlarge the field for the professional blood donor.

Management of HOME and FAMILY

By
Ruth Lindquist

The adolescent daughter who has been a part of the family council over a new home may be willing to sacrifice certain desired garments.

THIS article is based on a study made of 355 families who replied to a questionnaire on the subject of home management in its relation to child development. The study, inaugurated by the child development and parental education committee of the American Home Economics Association and promoted by the committee, together with the membership of Omicron Nu and Phi Upsilon Omicron, brought together information on the attitudes and practices in a selected group of homes, as given by 355 wives and 229 husbands, the majority of whom hold degrees from a college or university.

From the replies of the group, good management appears to be an important means toward the frequently stated goal of these parents—the finest development of the members of the family. The development to which they have referred is not merely physical fitness, but intellectual, moral and emotional growth as well. By way of explanation, the term "management" is used to mean the organization, direction and control of the human and material resources of the family. The most effective management appears to be that in which both husband and wife accept responsibility for the attainment of their objectives.

The large majority of the homes studied had been established less than fifteen years. The range in the number of children was from none in one family to nine in another, with two thirds having one or two. Fifty-seven out of each hundred children were too young to go to school.

The general statements of facts that appeared to govern the procedure in the 355 homes included in the study are here presented as principles of management, under the headings of household organization, income, time and energy, health, and personal relationships and growth.

Household Organization

The formulation of policies and standards provides a measuring stick for evaluating interests, activities and expenditures.

The family that has a clearly recognized goal finds it less difficult to decide what should be eliminated and what is too important to omit, whether it is a question of using money or other resources of the family. For example, the relative importance of daily dusting and time for companionship with children is readily determined when one decides in terms of what each contributes to the goal.

When these policies and standards are the result of group proposal, discussion or approval they are more likely to be promoted by the individual members.

The adolescent daughter who has been a part of the family council in considering the wisdom of planning for a new home does not object to sacrificing certain desired garments in the interest of building up the savings account. The recognition by all the group that orderliness in the care of clothing, newspapers and personal possessions makes a more attractive home and frees time for the housekeeper, reduces the amount of nagging and the need for constant picking up by one member.

If definite plans are used as the basis for procedure, a larger degree of satisfaction, harmony and accomplishment results.

Pigeonholing the tasks reduces peak-loads of work at any one time. Scheduling the hours and the activities for diversion and comradeship, as well as deciding on hours for meals, the time for the baby's bath, and the day on which the cleaning woman should come, keeps these things from being crowded out or from coming only infrequently. Living by the clock and by the financial blue print keeps the group from making extended detours. Regularity and system in the child's day prevent fatigue and irritability for both child and parent.

Plans that can be lived by involve an intelligent consideration of all of the resources and the needs of the group.

The wise mother anticipates the situations that are likely to arise from too little sleep, too much excitement, or constipation of the children, and in the plan provides for the physical needs of the child. These needs are also recognized by the father, and he abides by the plan.

A system of cost accounting enables the family to analyze its strength and weakness in spending and to profit by them.

This principle can also be related to the use of time and energy. Knowing how long a time is required for members of the family to do specific tasks keeps them from scheduling more than can possibly be accomplished and thus prevents the discouragement that results from inability to live by schedule. Knowing, too, what interruptions are likely to come at different hours of the day or week enables the housewife to put the tasks that require less concentration or those that are less important in the hours that cannot be counted upon for accomplishment. Thus the hours when the baby is asleep are saved either for the mother's rest period or for a continuous task that can be done only when there is a minimum of distraction.

Altering and perfecting plans is essential because of the wide variations that occur in the resources and needs of a given group.

This variation in resources and needs occurs as the children grow older. The schedule for meal hours is not the same for the very young and the older children, nor are the hours for sleep the same when the child reaches high school. So, too, the financial needs are entirely different during the year that the new baby arrives, the family moves, or the son goes to college, from what they are when these conditions do not occur. Changes in income or in occupation either necessitate or permit certain shifts in practices that would not otherwise be desirable.

Income

A regular and certain income that is adequate for the needs of the family promotes economic security, freedom from anxiety, and the maintenance of a satisfactory standard of living.

There is a wide recognition of this principle and a desire to insure the advantages that can come from a sufficiency of this world's goods. Frequently present advantages are sacrificed in the interest of future gains. For example, a man resigns from his position and spends a year or more in study in order to increase his earning power. Or the wife accepts part-time or full-time employment outside of the home in order to supplement her husband's income. The rural family, believing that a larger investment in farm buildings or machinery would be to its economic advantage ultimately, does not hesitate to use an undue proportion of its receipts for the purchase of plant and equipment.

The economic contribution that the members of the family make through their services determines the distance that the money income will reach.

The more limited or uncertain the income, the greater is the need for substituting unpaid services of the family members for those that might be bought were money available. This is seen particularly in the nature of the tasks that the wife and mother does regularly. Laundering, sewing, canning, cleaning and the entire care of the children all make her day longer and more fatiguing, but they do result in a smaller expenditure of money if her health can be maintained. If the care of the lawn and walks, the firing of the furnace, the repair of

Responsibility for possessions is easier to teach children if suitable storage space is provided.

furnishings and plumbing and the service on the automobile are accepted by the husband or the sons, more money is released for other needs. In the use of paid service for housework, there is an appreciation that the cost is not expressed merely in wages but also in the extra materials that are used by one who is less concerned and less skilful in making a little go the longest way.

If a margin beyond fixed needs is allowed in the financial plan, the family is enabled to meet unpredictable demands with a greater measure of composure and success.

Boys from their earliest years should have some household tasks. It will make them better husbands and fathers.

The difficulty of planning in advance is appreciated by those who have faced unusual demands upon the income, and it is this group particularly that has adopted the policy of making allotments generous. The actual proportion for savings may appear to be smaller at the beginning of the month, but it is understood that the margin reserved for emergencies will be added to savings if it is not needed. The expense of illness, dental work, hospital charges or travel is thus provided for. The values that are to be had by buying needed articles at a time that had not been planned are not out of the question because there is no reserve available. This principle is also applied by those who find scheduling of time and energy a device for releasing time, strength and nervous energy.

A satisfactory system of financial records for a household enables the management to know the nature and amount of its assets and liabilities with the expenditure of a minimum amount of time.

Simplicity in accounting is the key to a system which is to be followed over a period of time and referred to in making future plans.

There are evidences that variations in temperament and ability account for the fact that only a pliable system could be equally satisfactory for all. Those with good memories find the process of recording less necessary, while others who have a fondness for figures welcome a detailed cost accounting plan.

Time and Energy

Decreasing the number of processes performed daily or weekly shortens the working day.

Experienced homemakers have found that the application of this principle to the various phases of household activities is one of the greatest releasers of time and energy. Shopping one day in seven instead of daily is the well established custom in many homes. Washing dishes twice daily instead of three times works well when the family is small. The practice of having on hand a larger supply of linens and clothing enables one to cut the number of days for laundering in two. Planning meals for several days at one time instead of a meal at a time reduces the monotony of feeding the family 365 days of every year. The preparation of a two-in-one meat, vegetable or dessert reduces appreciably the number of hours in the kitchen. The time allotted to cleaning can be cut considerably by doing much of the routine less often than daily.

A place for everything and everything in its place simplifies the work and shortens the hours for the homemaker, in addition to reducing the sources of irritation and friction.

The family that provides the child with suitable space in which to keep his possessions finds responsibility for them much easier to teach. Coats are lost and favorite toys are difficult to keep out of reach of younger members partly because there is no place that a child can call his own. Too little or poorly arranged space for the linens and the equipment of the home complicates the process of keeping things in order.

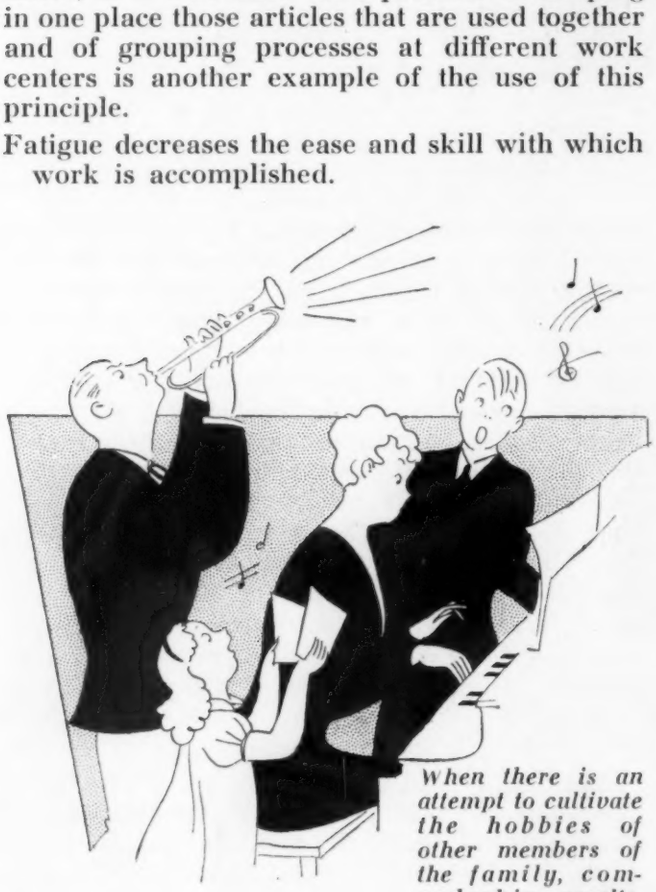
Intelligent remodeling of an unsatisfactory dwelling increases the usefulness of the physical plant.

The degree of convenience and comfort that is afforded the wife and mother primarily, but other members of the family also, is determined in large measure by the dwelling. While relatively few have the opportunity of building their own homes, all can effect changes that make the work easier. The addition of shelves for toys or the conversion of an extra hall on the first floor into a lavatory are but two of many examples that might be given.

The amount, the type and the arrangement of furnishings and equipment affect the ease with which housekeeping is done and also the appreciations and satisfactions of family members.

The case of one mother who bought pictures instead of good chairs until the boys were past the climbing stage illustrates the application of this principle. The emphasis that one finds on indoor and outdoor play equipment is indicative of the relation between interest and contentment of the children. The purchase of labor-saving devices, including many electric appliances, is a wise one. The practice of keeping in one place those articles that are used together and of grouping processes at different work centers is another example of the use of this principle.

Fatigue decreases the ease and skill with which work is accomplished.



When there is an attempt to cultivate the hobbies of other members of the family, comradeship results.

It is well for women to sandwich into the hours when they are less fresh the tasks that require less skill and concentration. Doing the week's baking early in the morning or the house cleaning by a piecemeal process seems desirable to many. Postponing mending and other jobs that can be done sitting for the portions of the day when one works less rapidly or with mind less clear is helpful.

Tasks that one does poorly or that one dislikes to do require additional effort and persistence.

For women who have a margin in the allotment for household expenditures many find that paid help for such tasks is the solution that keeps them from being cross and irritable. Others who need to stretch the income find that more information gained through short courses, reading or the experience of others helps them to develop skill. Others, through the longer trial and error method, gradually arrive at a point at which the anticipation and the doing become less of a bugbear.

Health

The degree of health and the period over which it extends affect the perspective as well as the accomplishment of members of the family.

Ill health interrupts the routine of the household and may seriously interfere with the outlook of one or more in the group. The woman who is half-sick finds homemaking too much of a challenge, and the fear of the future becomes nothing less than a nightmare. When there is abundant health there is likely to be optimism, faith and continuing enthusiasm for life, with all of its associations.

Preventive measures pay large dividends in terms of well-being and financial savings.

Attention to proper food, sufficient rest, outdoor activity, habits of elimination, standards of sanitation and safety keep the fitness of families on a high level with a minimum expenditure for sickness.

The services of expert diagnosticians, practitioners, surgeons, dentists and specialists are investments that increase the probability of early and complete recovery.

Recognition of the symptoms of illness and immediate provision for treatment have been the rule in the majority of the homes studied, with the result that there have been few deaths and practically no chronic invalidism. The infant who is under par is not allowed to continue showing signs of ill health, but medical treatment is secured from the outset.

The atmosphere of the home controls to a considerable degree the frequency of illnesses and disabilities.

One woman suggests a technic that has been helpful in keeping illnesses to a minimum in her family. It consists in controlling the amount of discussion about illness and the encouragement of a slightly ailing member. In homes in which health is expected the cases of incapacity appear to be fewer.

Personal Relationships and Growth

An understanding of the traits, tendencies and tastes of each member of the family and a desire to help him realize his ambitions reduce the amount of worry, friction and disappointment occurring in family life.

The interest that has been shown in classes and literature on psychology and child training, the time that has been taken for companionship, and the consideration that has been given to the technics for reducing friction point to the desire for appreciation and insight.

Differences in individuals create a need for greater insight and the use of a variety of technics.

The method that works with one is wholly unsatisfactory with another. With one child, praise provides the only incentive needed; with another, a considerable amount of supervision and reminding is the only way of being sure that responsibility is assumed.

The nature of the personality traits of the parents and their philosophies of life affect the character of the relationships within the group and the atmosphere of the home.

The effect of nagging, of miserliness, of selfishness, of cooperation, of optimism and of consideration, as well as of countless other traits, are too well known to need further comment. A willingness to admit error proved of immeasurable value in one home in breaking down barriers between parent and child.

The location, the dwelling and the grounds affect the standards that can be maintained and the possibilities of growth.

Selecting a place for the family to live results in a careful evaluation of many factors. The decision to move from a locality is likewise thoughtfully considered by these families in terms of the losses and the gains. In several instances the advantages of particular regions for children have become the chief consideration.

The practice of delegating responsibility, in proportion to one's ability to assume it, encourages willing participation and development.

For example, a young child who is eager to make his own bed is allowed to make it regularly as a part of his share in keeping the house neat and attractive and in freeing more time for his mother. The daughter who thinks she would enjoy washing dishes is given only a few to begin with.

Mothers in the neighborhood can take turns looking after a group of children, thus relieving one another of some responsibility.

Working with the inexperienced person until the proper technic is developed increases satisfaction, harmony and skill.

The practice of doing things together is one that is widely used as a method of teaching both with young children and with paid workers. Increasing the share of the learner from one lesson to another is the mark of the successful teacher who is there primarily to direct and not to do the task.

The division of labor that works best is that which is based on the interests, abilities and free time of members of the group.

While the major responsibility for the physical care of the children must frequently rest on the mother, there are certain phases of the child's education that fathers may provide more satisfactorily. In one home an explanation of death was one for which the mother felt wholly unfitted; in many homes information for boys regarding sex is regarded as the duty of the father.

Consistency and fairness in the treatment of each member of the family reduces the amount of misunderstanding and friction.

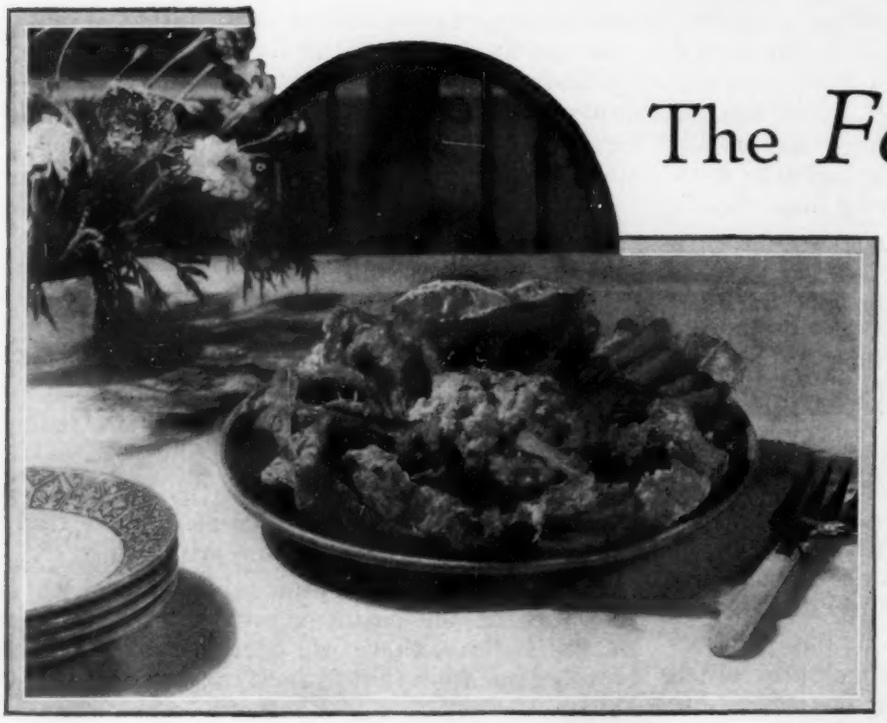
The effect of abiding by clearly formulated policies that are understood by all concerned is seen in resulting attitudes. Reasonableness in dealing with the requests that are made and time for furnishing explanations when they are needed promote confidence and good will.

Provision for some time away from the group for each member encourages appreciation and reduces the causes of irritation.

The familiar saying that absence makes the heart grow fonder has a basis in fact. The intimacy of home ties taxes the finest individual.

Cooperation with other families and individuals promotes the development of growth-promoting agencies in the community.

The frequency with which study clubs are organized and the occasions upon which nursery schools and kindergartens are established point to the facilities that parents have for gaining a desired end. There are instances, too, in which women in a neighborhood have scheduled each mother for a morning with a group of children and relieved her of the responsibility for her own children on the remaining days of the week. The place which the parent-teacher association appears to occupy in the establishment of educational policies is also worthy of note. In other words, the recognition of a community need is the preliminary step in creating public opinion and group action.



The *Food Value* of DRIED FRUITS

By
Doris W. McCray

Salad moulin

DRIED fruits, such as raisins, prunes, figs, peaches, apricots, apples and pears, are excellent quick sources of energy, because they contain a simple fruit sugar which requires no digestion before being absorbed into the blood stream.

Quick Sources of Energy

The presence of this fruit sugar is important, for our bodies must be supplied with energy foods and sugar is one of the most commonly used. However, table sugar (sucrose) is a double sugar and unlike the fruit sugar in the dried fruits, it must be acted on by digestive juices and changed to simple sugars before absorption into the bloodstream is possible.

This quick source of energy is concentrated in raisins with their 75 per cent sugar, dried figs with 56 per cent, dried apricots with 57 per cent, dried pears with 47 per cent, prunes with 39 per cent and dried peaches with 39 per cent.

Besides energy, the body needs many minerals to keep it in tone, such as calcium for bones, phosphorus for brain and tissues, and iron for blood. These are all found in the dried fruits, as are also magnesium, potassium, sodium, chlorine and sulphur, and are essentials.

Dr. Elvejhon of the University of Wisconsin has discovered that for the proper building of hemoglobin of the blood, the iron, to be effective, must be accompanied by small amounts of copper. The sources of copper are many, but Dr. Elvejhon places dried fruits fourth on the list, and fresh fruits twelfth. Cereals are third, but as they lose much of their copper in the milling, dried fruits really become third, as they lose none of their minerals in the drying process.

Contain Essential Minerals

While these minerals are present in very small amounts, they are in the amounts best assimilated by the body.

The metals calcium, sodium, magnesium and potassium are basic in their reaction, while non-

Prune bran cookies and apple custard

metals, such as phosphorus, chlorine, and sulphur, are acid, and the balance of one group over the other determines what the condition will be in the body. Vitality is low when there is an acid condition; if only slightly so, perhaps a cold results, but in some cases acidosis develops. Of all fruits, raisins are most alkaline.

Fig banana bread

According to best authorities, raisins contain 23.68 alkaline parts per hundred grams, as compared to bananas 5.56; lemons, 5.45; oranges, 5.61. The other dried fruits—figs, apples, peaches, apricots and pears—are also alkaline in their reaction in the body. Prunes are the only exception and they have a basic ash, but contain substances to form hippuric acid, which, of course, makes the urine acid. This undesirable quality is offset by their many other assets.

Robscheit-Robbins and Whipple of the University of Rochester school of medicine and dentistry have discovered in their experiments that in treating severe anemia the dried fruits, particularly apricots, peaches, prunes, apples and raisins, are effective in promoting hemoglobin regeneration. In fact, in building hemoglobin in simple anemia, the dried fruits that are mentioned above are far superior to all dairy products. Just what this "effective something" is, is as yet unknown.

The fiber content of dried fruits, while it contains no actual food value considered as such, has a tremendous value as bulk, or roughage. This roughage stimulates peristalsis; that is, it aids in moving the food along the alimentary tract toward elimination. The seeds of the figs and the skins from the prunes are particularly effective in relieving constipation. Concentrated foods without bulk, such as sugar, are not as valuable as concentrated foods with bulk as in the case of dried fruits.

Dried fruits contain some fat and protein, but in small amounts, less important than the very fine sugar and minerals.

Studies of the vitamins are constantly being made, and at the present time it is known that prunes contain vitamin A; raisins, prunes, peaches and apples contain vitamin B; and apples and peaches contain vitamin C. Thus these dried fruits aid the housewife to get more vitamins into her menus.

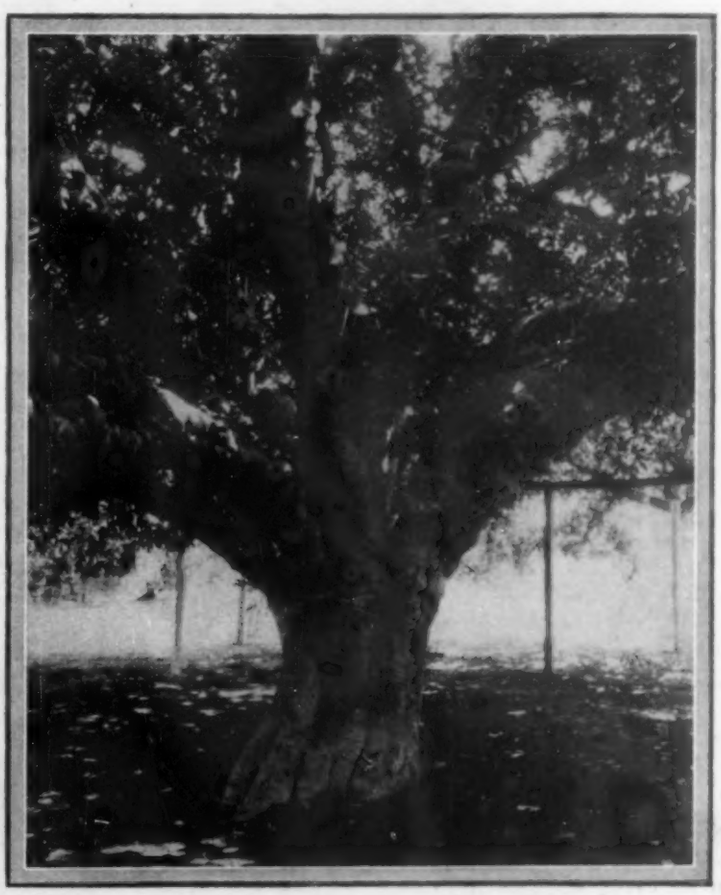
The modern accepted method of cooking dried fruits requires no soaking, but a quick boiling; one hour for prunes, and for the other fruits about forty minutes. By using this type of cooking, the texture of the fruits is more pleasing, they have no soaked taste, contain more of the natural fruit sugar and less juice; in other words, the fruits have more character.

The following recipes may contain some new suggestions as to the use of dried fruits in the family diet. Many housewives overlook these quick sources of energy in planning menus for the day or for the week.

APPLE CUSTARD

2 cups dried apples	1 cup milk
3 cups water	2 eggs
¾ cup sugar	¼ cup apple syrup
3 slices orange (rind included)	½ teaspoonful orange extract
⅛ teaspoonful salt	½ teaspoonful vanilla
2 teaspoonfuls gelatin	½ cup grapenuts
2 tablespoonfuls cold water	

Remove the particles of core from the apples and wash them. Add the water, sugar, orange and salt,



A fig tree

and boil forty minutes or until the syrup is almost evaporated. Remove the orange. Soften the gelatin in cold water. Scald the milk in a double boiler. Moisten the egg yolk with a little cold milk and stir it into the hot milk; continue stirring until the custard coats the spoon. Remove it from the fire, add the gelatin, apple syrup, orange extract and vanilla. Blend thoroughly. When the custard is partially cool fold in the stiffly beaten egg whites. Cover the bottom of a shallow pan with grapenuts. Lay apples on top. Pour the custard over the apples; chill. Serve in glasses, plain or with cream.

VALLEY COMPOTE

1 cup dried peaches
½ cup grape juice
1 tablespoonful sugar
Pinch of salt
½ cup seedless raisins
1 cup dried figs
¾ cup diced apples
½ cup water
¾ cup sugar
1 tablespoonful lemon juice

Make a syrup of the sugar, water and lemon juice. Boil the peaches fifteen minutes, drain, remove the skins, and slice. Add to the grape juice, sugar and salt, and cook five minutes; chill. Wash the raisins. Cover the figs with boiling water; after ten minutes, scrape off outside skin, and slice. Cover the diced apples with syrup to prevent them from turning dark. Arrange the fruits in six glasses. Add grape juice from peaches to syrup, and pour it over the fruit. Chill.

FIG BANANA BREAD

½ cup sugar
3 tablespoonfuls shortening
1 egg
¾ cup mashed bananas
1 cup sour milk
1 cup dried figs
½ cup chopped nuts
1½ cups white flour
1½ cups graham flour
4 teaspoonfuls baking powder
1 teaspoonful salt
½ teaspoonful soda

Boil the figs five minutes, drain, and cut them in pieces. Cream the shortening with sugar, add the beaten egg, sour milk and bananas, and mix well. Add graham flour, then white flour sifted with baking powder, soda and salt. Beat thoroughly, add figs and nuts, and when blended pour into greased, paper-lined bread pan. Bake one hour in a slow oven (300 degrees F).

PRUNE CORNMEAL PUDDING

½ cup yellow cornmeal
2 cups boiling water
1½ teaspoonfuls salt
1 cup milk
1 tablespoonful cornstarch
¼ cup sugar
2 eggs
1 teaspoonful grated lemon rind
1 cup sliced cooked prunes
12 marshmallows

Add the cornmeal gradually to the boiling salted water, stirring it constantly to prevent lumps. Cook over water one hour. Blend the egg yolks with milk, sugar and cornstarch. Add this to the cornmeal and cook until it is thick and smooth, about five minutes. Remove from the fire, add the lemon rind, juice and prunes. Combine with the stiffly beaten egg whites and marshmallows cut in quarters. Blend lightly and chill. Serve with cream.

APRICOT MARMALADE

2 cups dried apricots
1¾ cups sugar
2 teaspoonfuls grated orange rind
2 teaspoonfuls grated lemon rind
1 cup orange juice
½ cup shelled, blanched almonds

Cover the apricots with water and cook them until they are soft and the water is well evaporated, which will require from thirty to forty minutes. Beat the apricots with a spoon until smooth, add the sugar, sliced almonds, orange juice, orange and lemon rind, and cook thirty minutes. Stir frequently to prevent burning. Pour in hot jelly glasses, and when cold seal with paraffin. This makes four or five glasses.

PRUNE BRAN COOKIES

1½ cups sugar
1 cup shortening
3 eggs
½ cup milk
3 cups flour
6 teaspoonfuls baking powder
2 teaspoonfuls cinnamon
3 cups all-bran
1 teaspoonful vanilla
2 cups prunes

Boil the prunes ten minutes, drain, remove the pits and cut them in pieces; cream the sugar with shortening, add beaten eggs and milk, and mix well. Combine with the flour sifted with baking powder and cinnamon. Add the bran and beat thoroughly; add the prunes and vanilla, and beat again. Drop on a greased baking pan and bake about fifteen minutes in a hot oven (400 degrees F.).

SALAD MOULIN

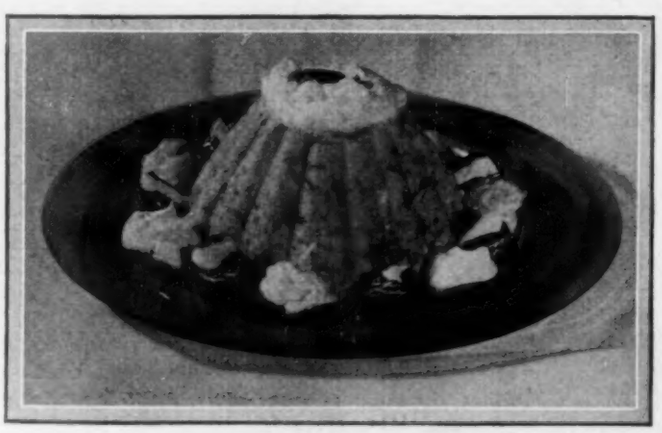
1 cup cooked prunes
1 cup finely grated carrots
1 can asparagus tips
1 cup cottage cheese
½ cup seedless raisins
1 green pepper
Lettuce
French dressing

Pit the prunes and refill them with grated carrots. Wash the raisins, drain them and combine them with the cottage cheese. Arrange the lettuce on a large plate and make a mound of the raisin cottage cheese in the center. Place the asparagus tips in four groups radiating from cheese; between these place three carrot-filled prunes, and then lay a thin slice of green pepper on each group of asparagus. Pour French dressing over all.

PRUNE LEMON FLUFF

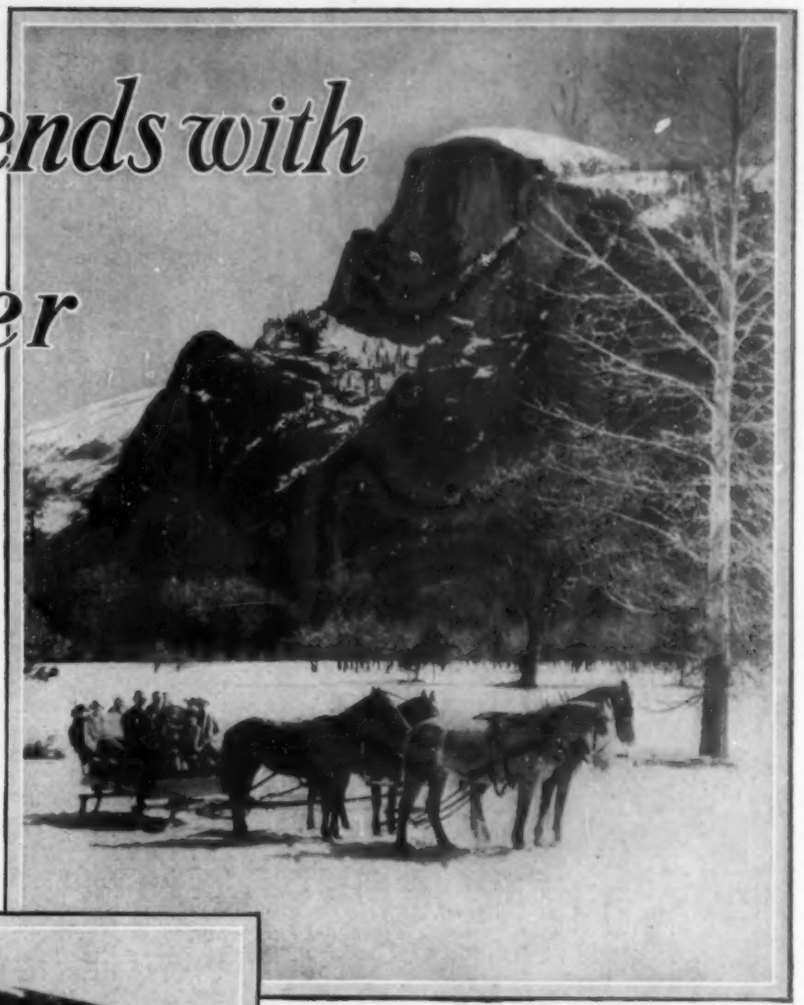
1 cup cooked, pitted prunes
1 package lemon jello
1½ cups boiling water
2 tablespoonfuls sugar
Pinch of salt
2 egg whites
1 teaspoonful grated lemon rind
1 teaspoonful lemon extract

Cut the prunes into small pieces. Dissolve the jello in boiling water, add the sugar and salt, cool until the mixture starts to thicken and then beat it three or four minutes. Add the unbeaten egg whites, lemon rind and extract, and continue beating until the mixture is a thick froth; add the prunes, mix thoroughly, and let it sit until quite firm. Serve the fluff with a thin custard or cream.



Prune lemon fluff

Making Friends with Winter



WINTER SPORTS are most varied and exciting in the mountains, and our west coast has more than one future rival of St. Moritz.

Photos by Ewing Galloway

OUTDOOR DOGS and an outdoor girl—two huskies and one lusty.

Another "Lost" Battalion

By Henry Pleasants, Jr.

PART II

ABOUT the middle of August, 1918, orders were issued from General Headquarters, A. E. F., that all the sanitary squads of the combat divisions were to be recalled to the Advance Section Service of Supply and put under the direct control of the chief surgeon of this section. The definite reason for this was the fact that the experiment tried by the 77th Division in area sanitation had proved the inestimable value of having trained sanitarians permanently located in the area. With the rapid movement of American troops from the United States to France it was imperative that these green troops be kept under the closest sanitary supervision as soon as they arrived.

The Advance Section had been divided into some twenty-five training areas into each one of which a whole division would move for some weeks prior to advancing to the front. Each squad would be assigned to a training area and would take charge of the supervision of sanitation.

The division sanitary inspector of the 77th was relieved of duty with the division and placed in charge of the work of the squads. His first task was to make a survey of the personnel and find out the individual qualifications of the men and officers. This was somewhat difficult for the reason that the Advance Section covered several hundred square miles and the transportation facilities were not the best. Then, too, with the arrival of the green troops came the epidemic of influenza, which taxed the area hospital facilities to the utmost.

As each squad arrived in an area the commanding officer of the camp hospital in that area uttered a fervent prayer of thanksgiving and immediately insisted on the squad helping out with the nursing and orderly work in the hospital. The chief surgeon of the Advance Section, realizing the desperate need for help in the hospitals, allowed the squads to step in where they were most needed and remain on hospital duty until the emergency was past.

Of course the real function of the sanitary squads went by the board for two or three months, but in that time they accomplished some splendid work. Many of the men had had some training in medical schools; some had been nurses. In fact a glance over the qualification sheets showed that nearly every important type of civilian occupation was represented. The value of such men in helping to bring order out of chaos when a hospital, planned to accommodate 450 patients, was suddenly called upon to take care of 1,000 desperately ill flu patients could scarcely be estimated.

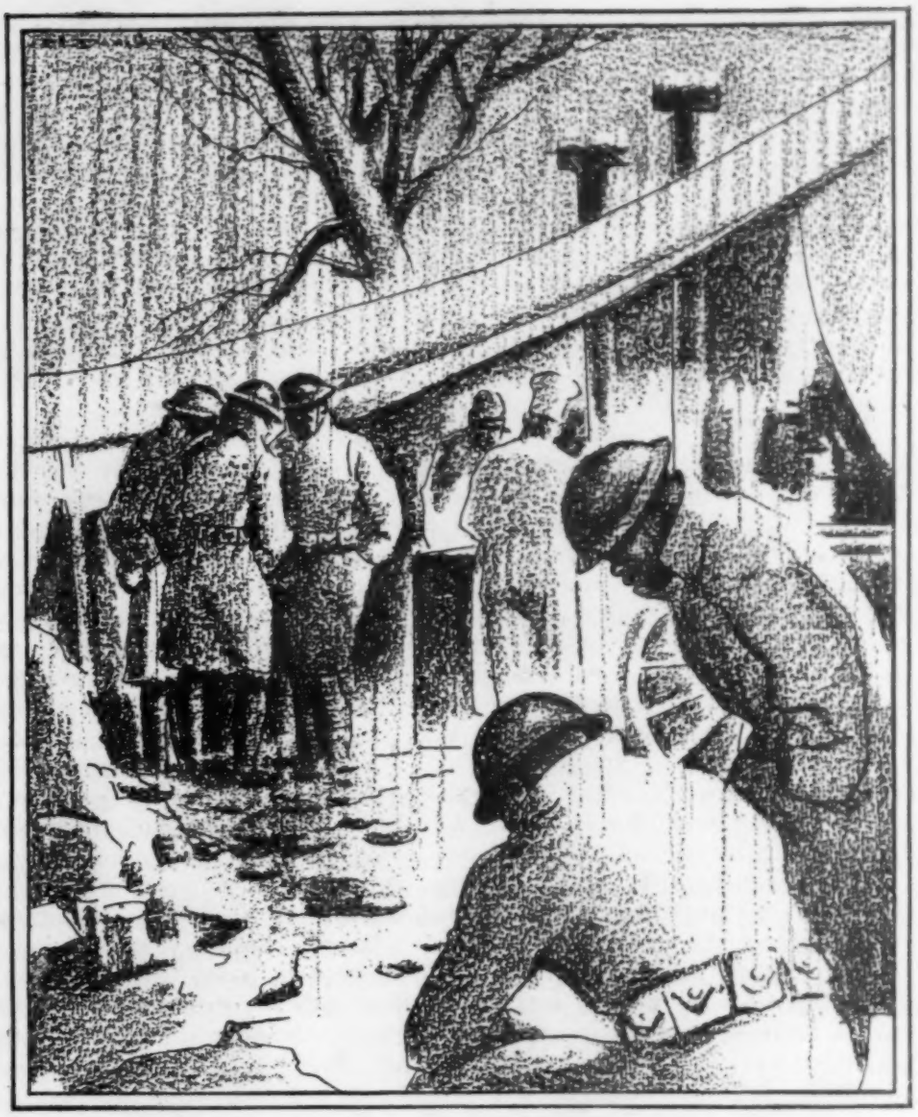
When the epidemic of flu subsided and the enlisted men of the medical department whose arrival in the camp hospital had been delayed in the confusion incident to the great Argonne drive were finally established in their duties in the camp hospitals, it became possible to withdraw the squads from hospital work and place them in the areas. The boys were anxious to go, for they were weary of nursing.

One incident occurred about this time that showed the great versatility of the sanitarians. At Bourbonne les Bains the camp hospital had

Muddy streets had given way to gravel; every cot was screened with burlap; every tent had a floor.

been overtaxed by the flu epidemic. One of the sanitary squads had been assigned to duty in the hospital and had done excellent work. Word suddenly came to the office of the surgeon of the Advance Section that a battalion of Negro troops located a few kilometers from Bourbonne les Bains had been stricken with influenza in its worst form.

The inspector visited the camp and found conditions even worse than had been reported. The Negro troops were commanded by young white officers who had had the very minimum of training before going overseas. The medical officer had been actually in practice in his home town only three weeks prior to his arrival in France and knew nothing of military sanitation. The battalion was encamped in a meadow that had little, if any, drainage. The tents held from four to six soldiers each and were jammed up with cots, bedding, equipment and coughing Negroes. Under foot was a sea of slimy mud; over head was a drizzling cold rain chilling the bones.



The kitchen was a drafty lean-to around which huddled a handful of miserable darkies too ill to work and terribly homesick.

The kitchen was a drafty lean-to covering a discouraged battery of field ranges around which huddled a handful of miserable darkies, most of whom were too ill to work and all of whom were terribly homesick. The medical officer was doing his best to meet the situation with the limited facilities at his command. Already twenty-four men had died within the week, and the chances were strong that more would follow.

The inspector realized that something had to be done promptly. He immediately ordered a sergeant and a corporal of the sanitary squad on duty in the camp hospital to report to the commanding officers of the battalion for duty. He instructed the medical officer to see that every recommendation of these two men was carried out instantly. He then wrote out a complete system of precautionary sanitary measures to be instituted and returned to headquarters.

Two weeks later he returned to this camp. The transformation was remarkable. The sanitarians had gone back to their hospital duties, as their presence was no longer required. A Negro sergeant showed him around the camp with utmost pride. The muddy streets had given place to gravel and stone walks; every cot was screened with burlap; each tent had some sort of floor; the kitchen was immaculate, and the mess tent clean and tidy. The entire morale of the organization had risen. The sergeant stated that only one death had occurred since the inspector's previous visit.

An interview with the battalion commander and the medical officer was even more interesting. It could scarcely be termed a coincidence that immediately upon the institution of the strict sanitary regulations the sick rate fell from sixty to eight within three days. No further outbreaks of influenza occurred among these troops.

As the sanitary squads gradually worked into their new positions in the training areas, their scope of activities developed along many new lines. Throughout the entire winter of 1918-19

small epidemics of influenza, pneumonia, meningitis and even typhoid fever broke out in some of the concentration points in which the troops were in close quarters. The inspector relied on the commanding officer of the particular squad in the affected area to keep a close check on the action of the unit commanders in relation to sanitary discipline. The enlisted men of the squads supervised the details of labor troops assigned to construction work or assisted the medical officers in examining water sources, obtaining clinical specimens, or estimating billeting space in the towns.

How Influenza Was Checked

As an example of the importance of prompt handling of infectious and contagious diseases such as influenza, the sanitarians found that in an ordinary barracks containing eighty men a respiratory disease such as influenza would appear first in one man. The following day perhaps four or five men in the cots nearest to the patient would be affected. The third day the majority of the men in the barracks would be affected to a greater or less degree. Such epidemics occurred in barracks of troops in which sanitary discipline was excellent as well as in those in which discipline was lax. This was discouraging.

One day the inspector noticed that invariably the men, on returning from a meal, placed their well cleaned mess kits on the floor under their bunks. He noted also that the time allotted to sweeping the barracks was invariably after meals, and it was probable that much of the infected dust of the barracks settled on the otherwise immaculate mess kits.

Several important orders were issued subsequent to this observation: First, that prior to every meal each man would plunge his mess kit into boiling water; second, that every barracks would be oiled with old waste oil drained from trucks and motor cars, and that there would be no more dry sweeping of barracks floors; third, that there would be a medical inspection of every unit prior to the day's work and at the last formation of the day, and that every man who showed either fever or symptoms of even a common cold would be isolated from the rest of the men. The result of the institution of these measures was nothing short of miraculous in stopping the spread of disease.

In the matter of water-borne diseases, such as typhoid and dysentery, the work of the squads in the training areas was invaluable. While all the American troops had been given immunization against typhoid and paratyphoid and the occurrence of this disease was phenomenally rare, there were a few small epidemics. The worst of these occurred in a division that had just returned from the most grueling service in the front line and whose men were utterly exhausted and in no condition to withstand infection. On their return from the front they had passed through an old training area previously occupied by the French. In this area there had been an unusual number of cases of typhoid during the entire four years of the war, and the water supply was badly contaminated. In surveying one of these towns a member of one of the squads poured a can of creolin into a latrine about 200 yards from the town pump. Within two days the commanding officer of the squad was interviewed by the town authorities protesting that the American sanitary men were making the town water undrinkable! Needless to say, a general order was issued prohibiting American troops from drinking any water that was not chlorinated.

One or two small epidemics of typhoid were traced to infected cooks and kitchen police, and the sanitarians were able to assist the overworked force from the medical laboratories in examining the kitchen forces. By making careful charts of the camps in relation to the occurrence of typhoid, it was possible to determine almost at a glance as to whether the epidemic was due to food handlers or to water supply. In the former the cases would center around some kitchen; in the latter the cases would be scattered throughout the cantonment.

Keeping Down Typhoid Fever

While the most important work of water analysis was done by the laboratories, the sanitary squads were equipped with small testing outfits that would roughly reveal the presence or absence of dangerous substances in the water and the presence or absence of evidence of proper chlorination. This enabled the squads to keep a check on the contents of the water bags used by the troops, for it was not infrequent that tender-hearted mess sergeants would listen to the growling of the soldiers over the taste of chlorine in the drinking water and would omit the treatment.

On one occasion the value of this check-up was illustrated when a sudden flare of intestinal trouble occurred at Langres in the troops attending the military schools. The city water supply was supposed to be excellent as it was conducted through a complete chlorination plant before being piped to the city. The sanitary officer investigated this plant and was courteously shown around by the French officer. The water that left the plant was tested in his presence for evidence of free chlorine; the reaction proved to be satisfactory. But some bright-witted member of the sanitary squad on duty in the town decided to test this water after it arrived at its destination and to his astonishment found no evidence of chlorination. Further analysis showed a dangerous number of colonies of bacteria in the specimens.

The inspector who visited the town soon after the epidemic started found the explanation of

this apparent contradiction of evidence to be due to the fact that the original source of the city water supply was the Marne River, which at that time was very muddy and filled with organic material washed from the fields. The water had not been properly filtered before it entered the chlorination plant and the chlorine combined with the organic matter. By the time the treated water reached the city all the available chlorine had been used up, and the remaining bacteria that had not been affected continued to spread disease. The simple procedure of rechlorinating the water used by the troops stopped the epidemic.

Garbage and Sewage Disposal

The sanitary squad at Langres was active in other lines. As a result of the overcrowding of troops in schools the waste and sewage disposal system became inadequate. The French had adopted the simple expedient of dumping all of the refuse in an abandoned quarry hole about a quarter of a mile beyond the town limits. The sanitary officer realized that within a short time this would become a menace, so he proceeded to design and execute a practical disposal plant consisting of a concrete vat with a large outlet leading to a furnace the main flue of which consisted of a series of cast iron plates. As the sludge flowed down the hot plates it was quickly evaporated and the residue consumed with the least possible waste of fuel.

The squad kept an accurate record of the tons of material consumed as well as the amount of fuel used, so that the result of its experiment was an important contribution to the science of military sanitation. During the month of December, 1918, one hundred and thirty tons of sewage, waste and garbage were consumed with the expenditure of but fifteen small loads of wood as fuel. In January, 1919, one hundred and fifty-five tons were consumed with eighteen loads of wood. Taking into consideration the fact that the squad had constructed the disposal system out of stone that the boys had picked up and cement obtained from the engineers, the economy accomplished is rather remarkable.

In addition to this, their report showed that by melting the tin cans they had obtained enough solder to fulfil all plumbing needs in the area and by collecting the discarded tin they had been able to line all grease traps leading from mess kitchens and to cover all wash benches and roof temporary buildings. The grease obtained from the grease traps was collected and rendered and later made into a useful soap for general housecleaning purposes.

This squad also constructed a special delousing chamber, and in a single month successfully treated the clothing of 1,500 men, 300 mattresses and 1,000 suits of salvaged underwear.

In the early part of the spring of 1919 an epidemic of cerebrospinal meningitis broke out in a regiment of artillery troops in one of the training areas. A sanitary survey revealed some interesting facts: First, that the troops had been overcrowded in the billets; second, that this particular regiment had been cursed with outbreaks of meningitis ever since its formation in the United States several months previously, and, third, that each outbreak followed a concentration of the troops. The first occurred in the training camp, the second at the port of embarkation, the third on shipboard en route overseas, the fourth in the port of debarkation, the fifth on the troop train en route to the artillery training area at Le Valdahon and the sixth in the present location.

The problem that this unfortunate regiment presented had to be met by prompt action on the part of the medical department and the sanitary squad in the area. It was necessary to take over two additional billeting towns in the neighborhood in order to relieve congestion and to institute the most rigid quarantine measures in the affected batteries. With a history of so many outbreaks it was obvious that there must be a large number of carriers, or men harboring dangerous disease germs without actually suffering with the disease, and therefore every man in the regiment had to be examined bacteriologically.

The sanitary squad was asked to take care of the arrangement of the billets and assisted in the institution of the quarantine measures. The Advance Section laboratory, amid groans of protest at the herculean task demanded, proceeded to make cultures of the throats and noses of more than 2,000 artillerymen. As a result of their examination 140 carriers were detected and removed from contact with the rest of the regiment until all evidence of infection had disappeared. The epidemic promptly subsided, and the regiment was able to return to the United States on schedule time.

Difficult to Estimate Value of Sanitary Squad

The complete history of the work of the sanitary squads would make a fairly large and interesting volume, but my thought is to present only a few of the most important features of their work. It is difficult for persons to give credit for the avoidance of calamities, and the more successful the work of a sanitarian the more likely is his effort to be forgotten. The infantryman can point with pride to the amount of ground gained and the number of prisoners taken in an attack. The artilleryman can boast of the number of rounds fired and the record of damage done to the enemy. The surgeon can show the results of his technic in the number of wounded men returned to the firing line or the percentage of recoveries from influenza. But the sanitarian has little to show as evidence of epidemics that did not occur because he did his work faithfully and well.

The words were Dr. Adams', but the nonchalant way in which they were spoken was Ellen's own.

A Child's Will

The Story of a Juvenile Diabetic Patient

By Berenice Lowe

"I'M GOING to the state hospital tomorrow," Ellen announced when she brought the washing. "Why Ellen, what is the trouble?" I had known for a long time that she was being treated for diabetes, but I could not understand this sudden decision to go to a distant hospital, excellent though it was.

"Dr. Adams has begun giving me insulin. I really haven't been improving, he says, and he wants me to stay there a while, so the case can be watched." The words were plainly Dr. Adams', but the nonchalant way they were spoken was Ellen's own. Surely this thirteen-year-old girl did not see the calamity this would be to her mother, who was having such a struggle to keep her little family together.

"How will your mother manage? Who will take care of Jimmy? What does she want me to do about the washing?"

"Oh, she'll do the washings, just as usual. Walter will deliver them and he's going to help take care of Jimmy, too. He wants me to get well."

"Isn't your mother going with you?" I exclaimed.

"No, Dr. Adams says that isn't necessary. A student who is going to the university will take me, so I'll be all right."

I hurried to get a little letter portfolio I remembered I had, for I didn't want Ellen to see how the news had frightened me, and a "going-away gift" might make some of her minutes brighter.

During the few weeks following I had occasional reports from the helpful Walter.

"She's coming along fine," he said one day. "She's gained 4 pounds. Mom's awful glad." And again, "Ellen's going to have to take insulin, but only a little, which is getting off easy, Ellen says."

I realized that insulin was a marvelous help in the treatment of diabetes, but knew that watching the diet was of prime importance. Would Ellen's long stay help her permanently when her mother had not been with her to learn how to care for her? How could she be benefited if in a few months she were to slip back even though she had gone forward for a few weeks? It was not until after Ellen's return that I learned how wise Dr. Adams had been.

A beaming Ellen came late one afternoon with the rumbling little cart, which bore my washing and gurgling Jimmy.

"Why, Ellen, how well you look!" I exclaimed delightedly.

"Yes," said Ellen, "and hasn't Jimmy grown?"

"How are you, anyway?"

"Fine, and say! Jimmy's cuter 'n ever. When he saw me, he—" and Ellen gayly changed the subject from her troubles to the rewards of having a fascinating, healthy brother.

"You must come to see me and tell me all about your experience, Ellen. Will you?"

"Oh, yes, I've learned to do lots of things. I can make baskets and trays and cunning little rag dolls and bead bags—"

"That will be interesting. Suppose you come to lunch tomorrow and we'll have a fine afternoon together." Perhaps, I thought, Ellen could join my group of girl scouts, now that she was so much stronger.

"I'm very sorry," said Ellen, "but I am not allowed to eat away from home. I must be where my equipment is."

"Equipment! What do you mean?"

"Well, you see, I'm on a diet. I have a chart that tells how many calories of each food I

require. Then I have scales on which to weigh everything. Besides, I must prepare the syringe for insulin. One of the rules at the hospital is that we are never to eat away from home."

"That isn't so bad," I tried to be cheerful. "Come for a long talk, anyway."

But things happened differently. I chanced to meet Dr. Adams the next morning. After congratulating him on Ellen's improvement, I voiced my fears that it wouldn't—it couldn't—last. I could see that her too-busy mother never would be able to give Ellen's diet the proper attention—couldn't Dr. Adams see it, too? Furthermore, how could her mother, who had not gone with Ellen to the hospital, know what to do or how to do it?

"Come with me," said Dr. Adams, "I am going to Ellen's house while her lunch is prepared. I have something I want to show you."

Ellen was expecting him.

"I'm going to show you off, Ellen," he told her. "Do your stuff now."

Ellen's mother's kitchen was as spotless as the clothes she sent me each week. When Walter had brought chairs for us, Dr. Adams beamed at Ellen. "On with the clinic, nurse," he said, then crossed his knees and waited.

First, Ellen got her scales, which weigh by the gram rather than by the ounce. Then she brought food from the icebox—bacon, asparagus, eggs, spinach.

"I make my own mayonnaise," she said. Her chart hung on the wall above the table. Next to it was a pad of paper and a pencil.

She handed me her menu she had written and I read:

Shirred egg
Two strips bacon
One helping buttered asparagus
Spinach salad with mayonnaise
Lemon gelatin

Just before her meal was prepared, Dr. Adams asked, "Now the dose of insulin. Let's see that."

Ellen took a small bottle from the icebox and placed it on the table. From a small wooden box she took a hypodermic syringe, detached the needle, put it in a small white enamel dish, covered it with water, set it over the flame, allowing it to boil about a minute. After pouring off the water and allowing the needle to cool, she carefully picked up the needle and fastened it to the syringe. Inserting it in the bottle, she measured her dosage of insulin. Laying the syringe down for a moment, so that its needle touched nothing, she pulled aside her clothing, rubbed a spot on the muscular part of her thigh with cotton (saturated with alcohol, I learned), then pinching a bit of the flesh, quickly inserted the needle. The entire procedure was dispatched efficiently. Ellen seemed more like a diminutive nurse than a patient with a disease which was fatal to so many young people only a few years ago.

Ellen seemed more like a diminutive nurse than a patient with a disease that was fatal to many young people only a few years ago.

When her luncheon was ready, Dr. Adams said, "Fine, Ellen. I don't need to stay to watch you eat that good meal. You're healthy enough to stow that away all right."

"How did you know she could do all that?" I asked as Dr. Adams drove me home.

"That's what I sent her away for. I knew she would learn—they teach every diabetic patient to look after his own case. Ellen might not have her mother with her all the time. Diabetes must be looked after every day. Ellen can and must depend on herself."

"By the way," he added, with a twinkle in his eye, "do you expect as much of your girl scouts as I expect of Ellen?"

"I never thought of a child's taking quite so much responsibility," I admitted.

"Well, children can handle lots of things," said my wise friend, "if they are properly taught, then properly trusted."

It must be so. Ellen has been following her schedule a year now and is constantly improving. She makes little baskets and toys, such as she was taught to make at the hospital, and these she sells to help pay for her insulin.

The Story of ANESTHESIA

By

John H. Evans

PART II

WE ARE now living in a world in which the pain produced during a surgical operation is a thing of the past. Since the introduction of ether anesthesia eighty-four years ago and of local anesthesia forty-six years ago surgery has been able to make rapid strides.

The science and art of anesthesia, although neglected for so many years after its introduction, has been developed to a marked degree during the last twenty years so that the safety of the anesthetic has been greatly increased and its after-effects greatly diminished.

These results have been brought about by a clearer understanding of the effects of anesthetics on the vital functions of the body, by improved apparatus that makes possible greater accuracy in the dosage, by more careful study and preparation of the patient before the operation, and by improved postoperative treatment.

The increase in our knowledge of the chemistry of anesthetics and of the improved method by which their detrimental effects are now so successfully combated is the result of extensive research on the part of physiologists, surgeons and anesthetists.

This research is being carried on in all the countries of the world, but more especially in the United States and Canada, where the specialty of anesthesia is most highly developed.

The many societies of anesthetists that have been organized in this and other countries have been instrumental in advancing the science of anesthesia, not only by research and the collecting of facts learned from the actual effects of anesthetics on the different types of patients but by disseminating the knowledge thus gained.

This they do by a yearly joint meeting called the Congress of Anesthetists and by their publication entitled *Current Researches in Anesthesia and Analgesia* as well as by the publication of many articles on anesthesia in various medical journals.

The office of Dr. Crawford W. Long at Athens, Ga., in which was performed the first operation under ether.

A patient about to undergo an operation usually has many questions on which he would like to be informed. There was once a patient so eager to obtain information that his many questions caused the busy surgeon to become impatient, and when finally the patient asked, "If I take ether, how long will it be before I know anything?" he received the reply: "Don't expect too much of the anesthetic."

The patient is usually concerned about the safety of the anesthetic. If he were to go through the medical literature to find out which is the safest anesthetic he would still be unable to decide, because of the conflicting reports.

To ascertain that there is a given percentage of deaths with ether, for example, and a lesser percentage with nitrous oxide and oxygen means nothing unless the anesthetics were all given by anesthetists of equal qualifications and the patients were all in the same degree of health.

The safety of the anesthetic is to be found in the one who administers it rather than in the

anesthetic itself. The success of a painting is more dependent on the skill of the artist than on the quality of the paints and canvas.

A patient frequently expresses a preference for a certain anesthetic and after the operation cannot understand why his wishes were not carried out. For example, the patient may desire that the operation, which we shall say is for the removal of the gallbladder, be done under nitrous oxide and oxygen. Upon awakening he detects the pungent odor of ether and wonders why it was used. The answer is that in his case it was not possible to secure the desired degree of relaxation with nitrous oxide and oxygen alone and enough ether was added to procure it. More relaxation is usually required for a gallbladder operation than for the removal of the appendix. As nitrous oxide and ether are the two anesthetics most extensively used in this country, it may be of interest to consider, briefly, the qualities of each.

Ether was the first anesthetic and has held its place against all competitors for its ability to render 100 per cent service in the realm of surgery. It can be relied upon to produce complete relaxation of muscles when needed and for this reason it is the friend of the surgeon, especially when performing serious operations in the abdominal cavity such as the removal of the gallbladder.

If the world were to be deprived of all anesthetics except one, the choice of that anesthetic would be ether. In the hands of the man without special training it is the safest. Its drawbacks are that it has an odor that is disagreeable to most patients; as it is an irritant, it frequently causes the patient to cough when going under the anesthetic; it sometimes produces a marked increase in the secretion of the bronchial tubes so that the lungs are less able to absorb oxygen; patients not infrequently become excited and have to be forcibly held while going under the anesthetic; it may do damage to seriously diseased kidneys; there is greater tendency to produce nausea and vomiting, and periods of both induction and recovery are longer than with nitrous oxide and oxygen.

While ether may be termed the friend of the surgeon, nitrous oxide may be called the friend of the patient. It has a rather agreeable, sweetish odor; it is not an irritant and therefore does not produce coughing or an increased secretion in the bronchial tubes; it has little effect on kidneys even when they are diseased; it disturbs the chemistry of the body less than ether, and the patients awaken in from two to three minutes after the completion of the operation.

Its disadvantages are that it is not capable of producing the degree of relaxation obtainable with ether; its safety requires that it be given by specially qualified anesthetists; an expensive apparatus is needed for its administration, and its cost is greater than that of ether.

ORIGIN OF THE WORD "ANESTHESIA"

Boston, Nov. 21, 1846.

My dear Sir:

Everybody wants to have a hand in a great discovery. All I will do is to give you a hint or two as to names, or the name to be applied to the state produced and the agent.

The state I think should be called "Anesthesia." This signifies insensibility, more particularly (as used by Linnaeus and Cullen) to objects of touch. The adjective will be "anesthetic." Thus we might say the state of anesthesia, or the anesthetic state. I would have a name pretty soon, and consult some accomplished scholar such as President Everett or Dr. Bigelow, Sr., before fixing upon the terms which will be repeated by the tongues of every civilized race of mankind.

You could mention these words which I suggest for their consideration, but there may be others more appropriate and agreeable.

Yours respectfully,
Oliver Wendell Holmes.

The letter in which the great poet and physician suggests a name for the condition of insensibility to pain.

Nitrous oxide and oxygen is used for all kinds of operations including those in the abdominal cavity. While the relaxation obtainable depends to a certain extent on the skill of the anesthetist, the addition of ether to the nitrous oxide and oxygen becomes necessary in many cases to secure the relaxation desired by the surgeons, some of whom demand more than others. If it is possible to perform the operation with equal success without the addition of ether, the patients usually appreciate it.

There are two other inhalation anesthetics in which the public is interested; namely, ethylene and chloroform.

Ethylene, which first came into use as an anesthetic seven years ago, is growing in favor and is already a close competitor of nitrous oxide. Ethylene, like nitrous oxide, is combined with oxygen before being administered to the patient. It has a disagreeable odor, and because it is an explosive gas its use is forbidden in many hospitals. It is more potent in producing relaxation than is nitrous oxide.

Chloroform, though popular in England, where its anesthetic property was discovered, is

not extensively used in this country at the present time for general surgery. It lost its foothold here in the early days because of its high mortality rate, before the specialty of anesthesia was developed.

Spinal anesthesia, in which the lower half or more of the body is anesthetized by the injection of a local anesthetic into the spinal fluid, is at present commanding considerable attention. It produces a marked relaxation of muscles, which permits the surgeon to work with ease in the abdominal cavity.

During the last thirty years spinal anesthesia has inspired three waves of enthusiasm. The first two subsided because the death rate was higher than with the inhalation anesthetics. Its third wave started about three years ago with improved technic, but it is too early as yet to tell how long the present enthusiasm for it will last, although it promises to maintain a substantial foothold, especially in selected cases.

When an operation is being performed under spinal anesthesia the patient is wide awake. The realization that he is being operated on may be detrimental to a highly nervous patient while to others the experience may be more or less interesting.

After the local anesthetic has once been injected into the spinal fluid it is impossible to withdraw the anesthetic if alarming symptoms develop, while the inhalation anesthetics, such as ether or nitrous oxide, may be quickly eliminated by the repeated inflation of the lungs with oxygen.

Spinal anesthesia, like inhalation anesthetics, is sometimes followed by nausea and vomiting. It may be desirable for very nervous patients not to know when they are to be operated on and in these cases ether mixed with oil is sometimes injected into the rectum and the patient, not knowing that an anesthetic is being given, is later brought to the surgery sound asleep.

A new rectal anesthetic, tribromethyl alcohol, is now being tried out.

Monument erected to Dr. Crawford W. Long at the University of Georgia.

A common fear is that the heart will not be able to withstand the strain which the patient imagines will be placed on it by the anesthetic. The truth is that even weak hearts do their work more easily when the patient is under the influence of a properly administered anesthetic. With especially weak and diseased hearts, accompanied by shortness of breath or difficulty in breathing, it is important to avoid a stage of excitement when the patient is taking the anesthetic and to keep an unobstructed airway so that there is a free path for the air to go in and out of the lungs. When this is done even these cases give no cause for alarm and go through the operation safely.

Patients suffering from diabetes or asthma often think that they are unable to take an anesthetic with safety. The scientific use of insulin before operation converts the diabetic patient into practically a normal risk, while the asthmatic person is able to take nitrous oxide, ethylene or chloroform, and oftentimes ether, almost as well as the normal person. A higher percentage of oxygen is sometimes needed in operations on persons with these diseases.

Another common fear is that of swallowing the tongue. This simply means that the tongue comes in contact with the back of the throat when the muscles of the lower jaw become relaxed so that breathing is made more difficult. This is easily remedied by putting into the mouth a curved tube through which the patient is able to breathe with the greatest ease.

Some are afraid that the operation will be started before they are asleep. The signs of anesthesia are so unmistakable that this fear is ungrounded.

One of the opportunities for service on the part of the anesthetist is that of winning the confidence of the patient. This is especially important with children, so that they may go to sleep without any disagreeable sensations and without the necessity of being forcibly held. An unpleasant experience with an

anesthetic in childhood may cause such a dread of an anesthetic that in later years a life-saving operation may be postponed until too late.

The child, like many adults, is afraid of the unknown. If he is seen by the anesthetist before going to the surgery his confidence is more easily won. When he is told how the anesthetic is to be given and that every one in the surgery will be dressed in white caps and gowns he is not so likely to be frightened. Most children take the anesthetic without any resistance. Many go to sleep laughing while playing a game with the anesthetist, such as seeing who can go to sleep first. Other methods that agreeably engage the attention of the child are often employed. It is not necessary to place the mask on the face, as this may cause a sense of suffocation which may be only mental but which seems real to the patient.

In addition to winning the confidence of the patient before the operation, a physical examination by the anesthetist sometimes reveals a condition of recent development that makes the postponement of the operation advisable.

Preparing for an Anesthetic

Patients often wonder why certain instructions are given to be carried out before operation. The taking of large quantities of fluid the day before the operation is to increase elimination and to help prevent nausea and vomiting, which might otherwise occur. Abstaining from smoking and from indulgence in alcoholic beverages for at least twenty-four hours before operation tends toward a smoother induction of the anesthetic and greater ease in procuring relaxation of muscles. The patient is instructed not to take food for several hours before the operation so that his stomach will be empty. When the stomach contains food it is much more difficult to relax the patient and there is danger of the food being drawn into the lungs should vomiting occur while the patient is under the anesthetic.

By a good night's rest in the hospital, assured by a sleeping powder if necessary, the patient is in a more relaxed condition, and with a greater conservation of his energies than would be the case were he obliged to travel from his home.

Preliminary Anesthesia

Usually a hypodermic of morphine is given before the operation further to relax the patient and to dull his sensibilities. There are some patients in whom morphine causes nausea and vomiting, which is often charged to the anesthetic, especially when the morphine is given frequently to these patients for the relief of pain after the operation.

When the many fears that beset the mind of the surgical patient are held before the light of truth they mostly vanish into thin air, provided competent surgeons and anesthetists are employed. When this is done the average patient is safer on the operating table than when crossing the street on a busy day.

Fotograms

Christmas carolers of the famous boys' choir of the Cathedral of St. John the Divine, New York City.

Whom Shall I Consult —

Optician
Optometrist
Oculist
Ophthalmologist
or
Ophthalmic
Physician?

By
L. L. McCoy

THERE seems to be much confusion in the public mind concerning the meaning of the five words listed above. The first three are employed most frequently and more or less interchangeably, whereas the other two are seldom used outside of the medical profession although the final term is gradually coming into more general use.

Another reason for the confusion is the fact that the title doctor is employed by each of the persons mentioned regardless of his training or ability. The word doctor is a snare and a delusion when used indiscriminately, for all too frequently it is employed without regard to its full quality and meaning. The degree of doctor is the highest any institution of learning can confer; hence it should be strictly guarded by law and ethics. M.D. (doctor of medicine) and not doctor should be the guiding sign in seeking medical aid.

Optician and Optometrist Defined

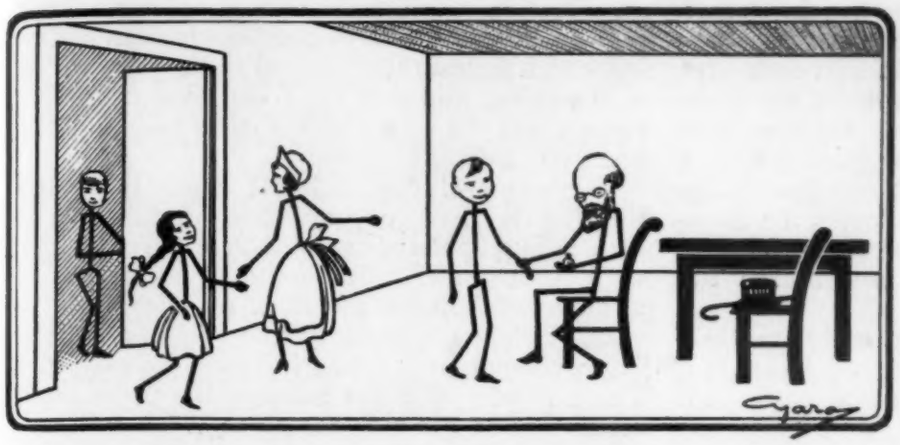
According to Webster: "An optician is one skilled in optics, that branch of physical science which treats of the nature and properties of light, the laws of its modification by opaque and transparent bodies and the phenomena of vision. Again, he is one who makes or who deals in optical glasses and instruments." In other words, he is a mechanic who understands how to grind and mount lenses. In reality he is a dispenser and not a prescriber of glasses. He is not a doctor in the true sense of the word.

"An optometrist is one who is skilled in or practices optometry. That is, he employs subjective and objective mechanical means to determine the accommodative and refractive states of the eye and the scope of its functions in general; or, he employs any means, other than the use of drugs, for the measurement of the powers of vision and the adaptation of lenses for the aid thereof." He prescribes and dispenses glasses but is not trained to recognize and treat the numerous ailments to which the eyes are subject. The fitting of glasses is only a portion of an eye specialist's training and work. The title doctor here is also a misnomer.

A Physician for the Eyes

An oculist or an ophthalmologist or more correctly an ophthalmic physician is one skilled in treating diseases of the eyes. By disease is meant any departure from the normal or healthy state; hence any disorder of the eyes is a disease in its broadest sense whether it is refractive, inflammatory or developmental. An oculist or ophthalmic physician therefore is a doctor of medicine who has specialized in the diagnosis and alleviation of eye diseases by the aid of medicine, surgery and optics.

Financially, there is little difference whom one employs to care for his eyes, but scientifically there is a great deal. Consequently one should be cautious with regard to the eye specialist who cares for him. There is no question in most minds as to whether the physician or the druggist shall prescribe for pneumonia or diabetes, so why should there be any question as to the care of the eyes?



Three million North American school children have some degree of hearing defect. This drawing from the health department of São Paulo, Brazil, is part of South American propaganda for physical examination of school children.

Reminiscences of an Otologist

By
WENDELL C. PHILLIPS

IN THESE modern days when health conservation in general is a much discussed theme, it is interesting to contemplate what rapid progress has been made regarding the knowledge, treatment and care of the ears during an otologic experience covering nearly fifty years.

Of course, men had ears long before this date. Much detailed material on the anatomy and physiology of the organ of hearing had been published by Valsalva as early as 1717. About fifty years later further contributions to the studies of Valsalva were made by Scarpa, Cotugno, Geoffrey and Comparetti. In 1821, Itard published the first comprehensive treatise on diseases of the ear, and in 1858 Max Schultze described nerve endings in the labyrinth. The actual treatment recommended in these earlier treatises was necessarily more or less empiric.

Progress Greatest in Last Fifty Years

It was not until 1873 that Herman Schartz and Adolph Eysell described the method of opening the mastoid cells by chiseling, and in 1877 Bezold gave the first clear description of the extent and infectious character of mastoiditis, that dreaded infection of the honeycomb-like areas within the mastoid bone, which lies directly behind the ear.

Considerable had already been written regarding the labyrinth, or internal ear, and information was to be obtained regarding the mechanics of hearing. Helmholtz's theory of sound analysis had been accepted. The positive transmission of sound through the cranial bone had also been propounded, and dizziness of aural origin had been fully described. All these steps constituted progress, but methods for illuminating the auditory canal and the nasopharynx by reflection had but recently come into vogue. But the last fifty years has shown the most rapid progress in otology as well as in every department of medicine and surgery in the history of the world. The positive discoveries leading to the establishment of the germ theory of diseases accounts in large measure for this progress.

A day's experience in an outdoor ear clinic fifty years ago was mightily different from a day's experience in an ear clinic of today. Formerly the large run of patients complained of running, or suppurating, ears, both acute and chronic. The acute cases to a large degree followed attacks of measles, diphtheria, scarlet fever or grip, and the chronic cases gave a similar history. The offensive odor and the partial or complete loss of hearing in the chronic cases was distressing, while fatal brain or blood-poisoning complications were frequent. Then came our knowledge that the offensive odor was an indication of bone decay within the ear. Parents of these children would often say they had been told not to worry, that the discharge would cease when teething had been completed. In fact, this fallacy seemed to be general in many communities, even in medical circles.

Then began the era of studies of infections in relation to diseases of the nose, throat and ear. We came to realize that in infections, or abscesses, in the middle ear, the infection found its way from the nose into the ear through the eustachian tube, which connects these two cavities. We learned that the middle ear cavity is practically one of the sinuses of the nose. This led to a more careful study of the prevention of acute infections of the nose and throat.

Hearing Conserved by Early Treatment

Fortunately Wilhelm Meyer had recently discovered the condition of diseased adenoids and the importance of removing these glands when enlarged, because they tend partially to fill the space between the nose and throat. It was found that upon the removal of the adenoids free nasal breathing was reestablished and that patients took fewer colds; hence, they avoided many infectious attacks. Gradually the general

medical profession came to realize that acute abscess of the middle ear should never be permitted to become chronic. Important measures of treatment, such as early incision of the drum for the drainage of the middle ear, together with removal of diseased tonsils and adenoids, a proper diet, the development of our knowledge of vitamins, all have tended to shorten the duration of the abscess, to lessen the complications, particularly mastoiditis, and to conserve the hearing.

In the more serious cases early mastoid operation has saved thousands of lives, and today in our clinics it is the exception to see a chronic discharging ear. Fifty years ago the mastoid operation was poorly developed and rarely performed. Mastoiditis, which is merely an extension of a middle ear abscess through a normal avenue into the cells behind the ear, in the light of more recent developments is better understood and more scientifically treated. Positive diagnosis is possible and while the operation is by no means always indicated, the modern mastoid operation performed in urgent cases not only saves many lives but prevents long continued, chronic suppurations, and, best of all, fully conserves the hearing in the affected ear. We now know that chronic suppuration of the ear and an odor mean chronic mastoiditis, usually accompanied by serious hearing impairment.

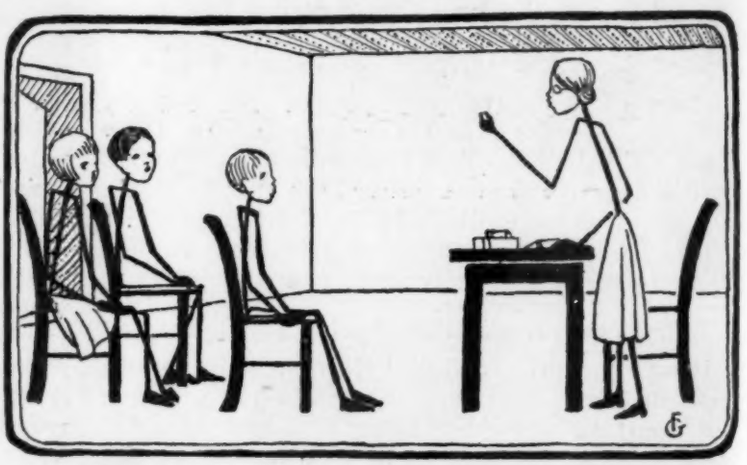
These are all cases that should have been subjected to the simple mastoid operation at the beginning. Here we are confronted with the necessity of removing diseased bone from a dangerous area, and this is accomplished by means of what is termed the radical mastoid operation. Adoption of these modern measures of treatment of acute ear infection, together with the progress that has been made in the management of other infections involving the nose and throat, particularly sinus attacks, has added materially to child health and development and has been successful in a large measure in the prevention of hearing impairment. Our increased knowledge regarding the types of infection is peculiarly serviceable in studies of middle ear suppuration. Furthermore, middle ear abscesses in the future will wane as diphtheria, scarlet fever and measles gradually succumb to the onslaught of science.

All these progressive measures will surely result in a lower percentage of hard of hearing adults in the future.

The hard of hearing world is a large world in itself, and for centuries nothing was even attempted to alleviate the problems of these handicapped people. Almost twenty years ago, a small group of hard of hearing adults, under the leadership of Edward B. Nitchie, united in an effort to solve their own problems. They realized that the sum of needless human suffering which follows the gradual failure of hearing is appalling, and that the frustration of human energy and the agony of enforced isolation and inactivity brings tragedy.

Furthermore, the otologist came to realize that the day had gone by when his full duty to his deafened patient ended with his professional verdict or with such treatment as might be administered along the lines of alleviation or cure. This is particularly true when no hope of improvement in the hearing may be expected. The otologist of today surveys the psychologic conditions and mental reactions of his deafened patient, realizing the importance of the hearing sense to that free human intercourse which is the basis of government, education and business. He knows that interference with free communication constitutes the tragedy of acquired deafness—a disability without outward signs, for the deafened person uses no crutch, no black goggles, no tapping staff. His psychology is unique and he is as much in need of readjustment as any other cripple if he is to remain a self-sustaining citizen and not a charge on society or the state.

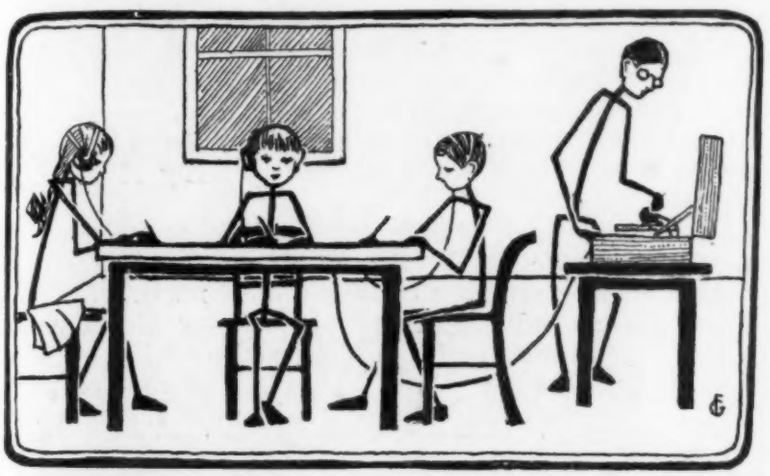
First and foremost, the hard of hearing insist on correct terms being used, for the reason that the public mind is already confused regarding deafness. In a population of nearly 120 millions in the United States alone about 50,000 inhabitants are living who have never known or experienced the full sense of the hearing function. These people are in a class by themselves; they were either born without hearing or lost it before the acquisition of speech. Their problems are educational and are peculiarly their own. They are the only persons who should ever be designated as deaf.



Lip-reading instruction will help the hard of hearing child to keep up with his regular classes.

The great army of persons with impaired hearing, numbering probably from 10 to 20 millions in the United States and Canada, should be classified as hard of hearing. In addition to

adults with impaired hearing, the audiometer examinations of the hearing of several thousand children of school age in America have furnished reliable statistical evidence that there are at least 3,000,000 children of school age with some degree of hearing defect. All these, young and old, once enjoyed the full benefits of normal hearing; they are physically normal persons, educated normally, but their hearing has become more or less impaired. They are earminded beings who have lost some of their hearing. They are in every walk of life and now that they have reached social consciousness, they have started out to do what no other handicapped group has ever attempted to do before in the history of the world—to study and solve their own social problems, to adjust themselves to changed conditions and to unite for the attainment of economic and spiritual rehabilitation, to protect and care for the children with hearing defects, and to win the necessary cooperation from medicine, physics, sociology and education.



All schools should have annual hearing tests conducted by means of the audiometer.

The first organization formed to promote this principle was the New York League for the Hard of Hearing, founded in 1910. In time other similar groups organized in Boston, Chicago, San Francisco, Los Angeles and Newark. The splendid results attained by these few pioneer organizations warranted the formation of a central body that could be utilized to promote in a large degree the projects undertaken by the several units; hence, the formation of the American Federation of Organizations for the Hard of Hearing with headquarters at Washington, D. C.

Within a period of eleven years nearly 100 units have come into existence in the United States and Canada, all spreading the gospel of rehabilitation of the hard of hearing, the prevention of hearing impairment in young children and the conservation of hearing through the instrumentality of careful hearing tests in all public and private schools. The findings and conclusions have opened a new field of research, including prevention clinics fostered by the local unit organizations. This constitutes pioneer service for the hard of hearing.

Another pioneer service for the hard of hearing has been the inauguration of placement and vocational guidance bureaus within several of the local units. Vocational training under state bureaus of rehabilitation has been realized. It has been frequently found that hard of hearing persons, when rehabilitated, are able to surpass their previous unhandicapped achievement.

For ages hard of hearing persons have had no defense against exploitation whether by employer, by medical quackery or by the faker of mechanical aids with his false promises to cure made through deceptive advertising. Deafened persons should always refrain from being misled by any form of newspaper or magazine advertising setting forth claims to cure deafness. On the other hand those with seriously impaired hearing should employ a hearing aid, many of which have been scientifically worked out.

It must be understood, however, that even approved hearing devices are simply aids to the hearing and do not improve the real hearing function. This principle is taught by many unit organizations, which have established hearing aid exhibits and hearing aid consultation services under the supervision of otologists.

In recent times electrical engineers have developed not only individual hearing devices, but of late the group hearing aid has come into existence, whereby it is possible for large groups of the hard of hearing to receive the benefits enjoyed by hearing persons. The group hearing aid is here to stay, and hard of hearing persons in every community should demand that the church authorities, managers of theaters and concert halls should install this hearing apparatus which scientists have selected and developed.

Looking to the future, we must insist that all educational institutions shall adopt annual hearing tests by means of the audiometer; that children with defective hearing shall receive proper otologic examination and treatment; that the child whose hearing is becoming impaired must and shall be kept where he belongs in school with normally hearing children, aided and abetted by sufficient lip-reading instruction, where his speech, his play and above all his psychology may remain normal. Higher education must also be made possible for him, with wise vocational guidance to minimize his handicap while permitting the fullest possible development of his education and his aptitudes in special fields.

SIMPLE LESSONS *in* *Human Anatomy*

By B. C. H. Harvey

LESSON XVI (CONT.). THE PARATHYROIDS—GLANDS FROM GILLS

THE human embryo, like that of every other vertebrate, has gills and gill clefts (fig. 64, September, 1929, and 86 and 88, November, 1929). They are used only by the fishes and by the young of amphibia for obtaining oxygen from water. In other vertebrates they degenerate after being at one early stage a well formed series of gills. The arches grow together and become the wall of the pharynx. But the gill clefts do not disappear entirely. Little bits of the membrane lining them, the entoderm, persist and become four little glands of internal secretion—the parathyroids. Two are formed from the third gill clefts, parathyroids III, and two develop from the fourth clefts, parathyroids IV (fig. 214).

In man they lie behind the thyroid attached to the outside of its fibrous capsule (fig. 215). They are small, the combined weight of all four being just a little more than 2 grains. Nevertheless most animals, if deprived of all of them, die within a few days. One of them remaining keeps the animals alive.

They are red brown in color, a little harder than thyroid tissue, have an abundant blood supply from the arteries of the thyroid but have only a few nerves (sympathetic).

Section shows them to be made up of cells arranged in densely packed masses or cords with many dilated irregular blood capillaries, or sinuses, the whole enclosed in a fibrous capsule. The cells are of two kinds, clear cells and larger cells full of granules; the latter stain like the red cells of the anterior lobe of the hypophysis. The gland shrinks somewhat in old age and vesicles containing colloid form in it, but it is not like the thyroid colloid for it contains no iodine. Sometimes in children the parathyroids are absent or too small. Then the children get irritable and have muscular twitchings and spasms, especially if they eat meat.

In such children there is also a deficiency of calcium in the blood and an excess of waste products of digestion of meat, which are removed rapidly by the kidney if the parathyroids are in normal condition.

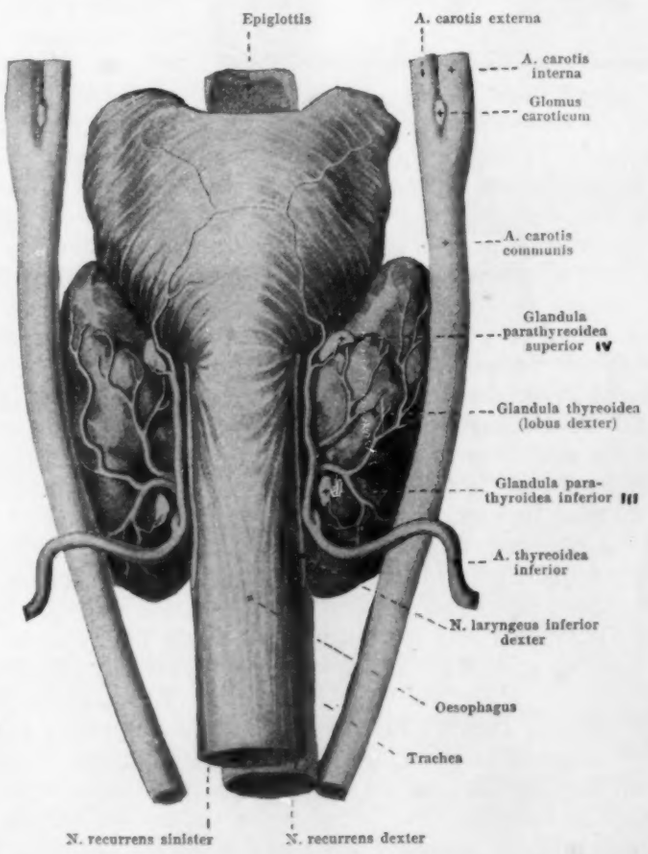


Fig. 215.—Thyroid and parathyroid glands seen from behind. The inferior laryngeal nerve, the main nerve to the muscles of the larynx, is clearly shown. (From Spalteholz, Herzil.)

An extract of parathyroids injected into the veins of these children (or experimental animals) relieves the symptoms and may save their lives. So does injection of calcium. The extract is sometimes given to relieve epilepsy and other conditions of nervous excitement. It is certain that the drug produced by the parathyroids is necessary for healthy life. It has not yet been isolated chemically, but there is evidence that it steadies the stimulus of muscle by nerves, that it facilitates the chemical interaction of calcium with other body fluids and that it facilitates the excretion of guanidine, keeping the amount of it in the blood down to a nonpoisonous level.

Figure 214 is a scheme showing the original connections of the thyroid and some other derivatives of the embryonic pharynx and its gill clefts. From the floor of the pharynx (tongue) the thyroid is shown to grow. From the gill clefts grow the parathyroids, the thymus and some ducts that occasionally appear in new-born babies as anomalies. As only the thyroid and parathyroid are known to produce drugs, or hormones, they only are included here among the glands of internal secretion.

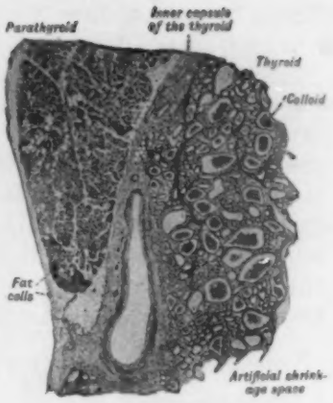


Fig. 216.—Section through the parathyroid and thyroid glands. (From Braus.)

Since the parathyroids are made from the lining of unused gills, it is interesting to inquire if animals that use their gills for breathing, such as fishes, have any parathyroids. Most of them do not. In the most primitive fishes, such as hag-fishes and lampreys, the gills bud off little masses of tissue that resemble parathyroids, but in all the higher fishes they are absent. Perhaps in these the cells making the gill linings not only pass dissolved oxygen through them from the water into the blood, but at the same time pass into it some drug like that made by the parathyroids of higher vertebrates.

The pancreas is a large gland lying in the back of the abdomen and emptying by two ducts into the small intestine about 4 inches beyond the stomach (fig. 217). As stated in the lesson on the alimentary tube, it pours into the upper end of the intestine chemical substances in large amount which carry on the work of digestion while the food is in the small intestine. The pancreas is about 10 inches long, and it weighs 3½ ounces. It has three parts called head, body and tail, the tail being the left end next to the spleen.

But the pancreas does more: it gives up to the blood a drug without which sugars are not burned in the body but accumulate in the blood causing diabetes. This drug is made in the Islands (fig. 218)—solid balls of tissue which are scattered through the substance of the pancreas but are most abundant in the tail.

Professor Bensley has devised a method of staining them so that they can be easily seen even in living animals and has counted them. Their number varies between ¼ million and 1¾ million. They are of various sizes. The largest are about $\frac{1}{70}$ inch in diameter. Each is fenced off from the rest of the pancreas by a delicate membrane. The other cells of the pancreas deliver their secretion to the system of ducts emptying into the intestine. Dr. Bensley has shown that the Islands grow on small stems (fig. 219) which were originally ducts but which become plugged up into solid cords. So their product is not delivered to the intestine but to the blood capillaries, which are so numerous in the Islands as to make it possible to recognize them even without staining them.

Sections show that they contain two kinds of cells, called the alpha cells and the beta cells. The latter are more numerous. Both contain granules, which are the early stages of the hormones. Those in the beta cells seem to contain the drug that helps burn sugar throughout the body. They are soluble in alcohol and that is why they do not show in figure 220. Dr. Banting devised a way of making of them an alcohol extract which could be given to diabetic patients and which enables them to burn sugars just as

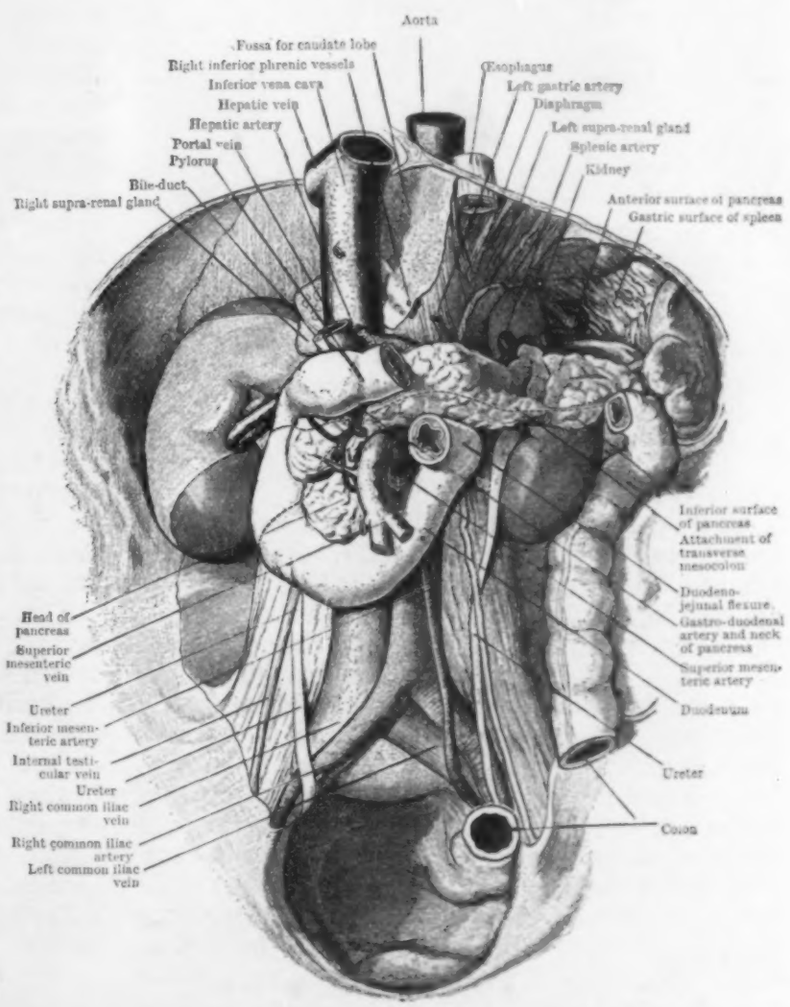


Fig. 217.—Pancreas and other viscera on the posterior wall of the abdomen. The stomach and most of the intestines have been removed. (From Cunningham's Anatomy, William Wood & Company.)

well as healthy people. This drug is called insulin because it comes from the Islands. It relieves all the troubles of diabetes while its effect lasts, but of course it has to be given over and over again. The small, stopped-up ducts of the Islands are the stems on which the Islands grow. A real cure for diabetes would consist in making new Islands grow to replace the old ones that are diseased. In experimental animals ways have been found to make new Islands grow; they are not yet so nearly perfected as to make them applicable to human beings, but they are being tried out.

The nature and functions of the granules in the alpha cells are not yet known, but it is interesting that Professor Frey of Berlin has

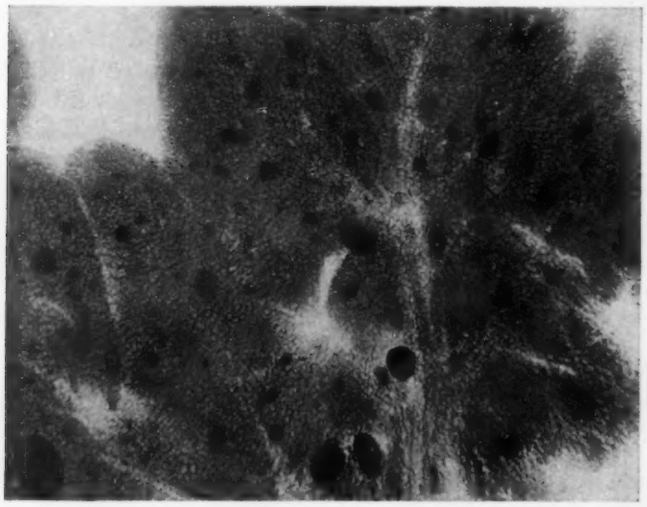


Fig. 218.—Photograph made with microscope of part of the pancreas in which the Islands are stained. Magnified 38 diameters. (From Maximow-Bloom, after Bensley, W. B. Saunders Company.)

recently (July, 1930) found that the pancreas produces another hormone distinct from insulin, which acts on the blood vessels of the muscles and skin.

The Suprarenal Glands

As the name indicates, the suprarenal glands are above the kidneys (fig. 221). Each kidney has one on top of it as though it had a hat—an old-fashioned, flat, cocked hat set a little on one side—the medial side toward the vertebral column. Though rather extensive (2 inches by 1 inch), the suprarenals are light, each one weighing about ⅕ ounce. Each has three arteries going to it and a big vein leading away. They have a greater blood supply than any other organ in the body, receiving seven and one-half times their weight of blood each minute. Since they have no ducts, they give up the drugs they produce into the veins (inferior vena cava on the left side and the renal or kidney vein on the right side). They have definite fibrous capsules, and though close to the kidneys are only loosely connected with their capsules. When the kidney falls out of place as sometimes happens, the "hat," or suprarenal, stays where it was.

Section shows that each consists of two parts —a thin plate, or core, in the inside, the medulla, and a rind, or cortex, completely surrounding it except at one place at which the vein comes out. The cortex is about ten times as big as the medulla. The medulla forms adrenalin; also called epinephrine hydrochloride. The exact function of the cortex is not known, but all animals die if deprived of it.

The Potency of Epinephrine

The medulla (fig. 222) is a spongelike structure, the spaces in the sponge corresponding to the numerous blood sinuses converging to the suprarenal vein, and the solid material to the medulla cells. These are large and practically every one is in contact with a blood sinus. There are two main kinds of cell, one containing granules and the other being a sympathetic nerve cell. Both are derived from the sympathetic nervous system of the embryo. The granules give the chemical reactions of epinephrine (yellowish brown with potassium bichromate, greenish violet with ferric chloride).

Extracts of the medulla contain epinephrine, a drug which even in minute amounts greatly increases the action of all structures that can be stimulated by sympathetic nerves. Thus it contracts arterioles and raises blood pressure. Like the sympathetic nerve stimuli it stops the action of the intestinal muscle; a solution of 1 part of epinephrine in 400,000,000 parts of water is strong enough to do it. When injected into hearts that have stopped beating it sometimes starts them again. It makes the liver discharge its glycogen and prevents fatigue in heart or skeletal muscle. But it is destroyed so rapidly in the blood that it is doubtful if enough of it is secreted ordinarily to produce any of these effects. Some investigators believe that in the nervous excitement of emergencies much more is produced and that it is then effective in helping the body meet the emergency. This is not proved and it is perhaps never a "self drug," but only a physician's drug.

The cortex (fig. 223) is made up of three layers: outer, middle and inner. These correspond to the youth, adult period and old age of the cells composing it, for during a rather short life (of perhaps four or five years) the cells move; they advance slowly but steadily in toward the inner layer, where they die off and are eaten up by scavenger cells, or histiocytes. Up to the end of the first year new cells are formed in the outer layer by cell division. Afterward they are formed mainly in the outer part of the middle layer, the outer layer being then mainly a reserve supply stored in columns that are arched toward the surface of the gland (fig. 223). The middle layer is arranged like an extensive locomotive boiler, the blood vessels

Fig. 219.—Two Islands of the pancreas and two ducts which go to the intestine. The smaller cords are attached to the Islands. They were originally tubes but the lumen has filled up. They are the stems on which the Islands grow. (From Maximow-Bloom, after Bensley, Saunders.)

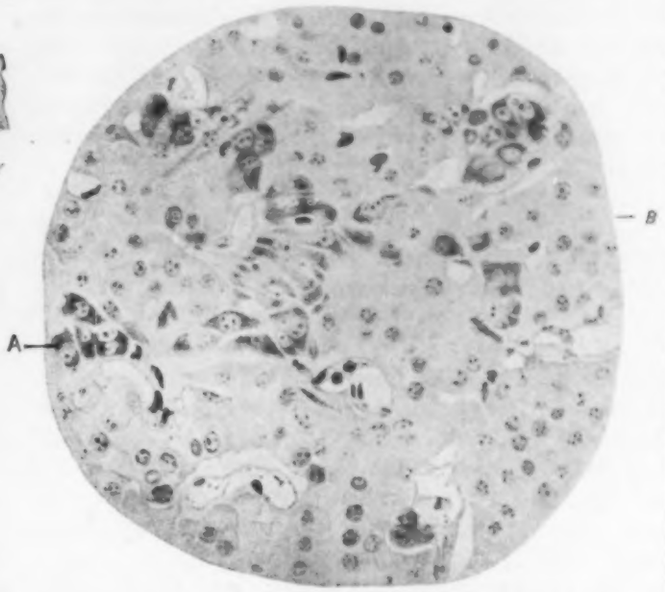


Fig. 220.—Section of an Island showing granular (alpha) cells A and clear (beta) cells B. The B cells also contain granules, but in this section they have been dissolved out with alcohol. Magnified 600 diameters. (From Maximow-Bloom, after Lane, Saunders.)

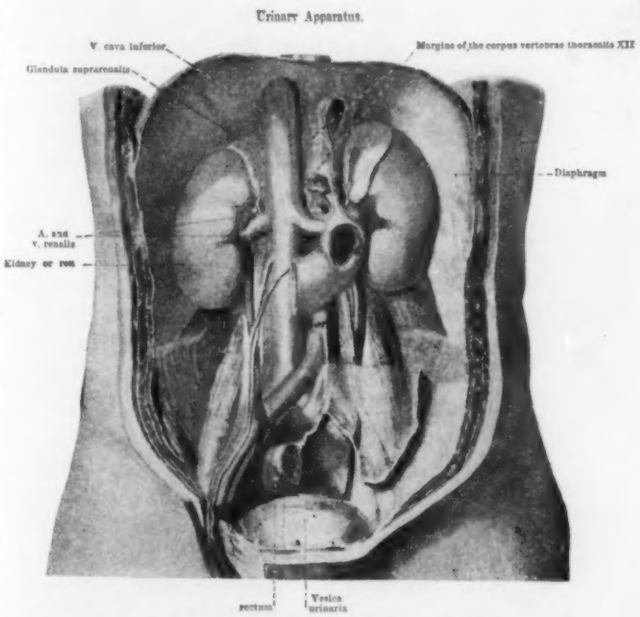


Fig. 221.—Kidneys and suprarenal glands with their relations. (From Spalteholz, Herzil.)

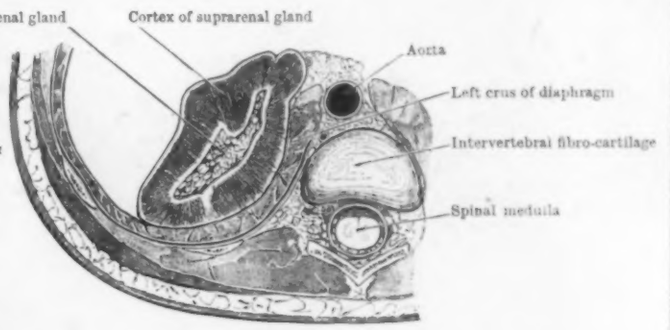


Fig. 222.—Section through the suprarenal gland of a newborn child showing cortex and medulla. (From Cunningham's Anatomy, William Wood & Company.)

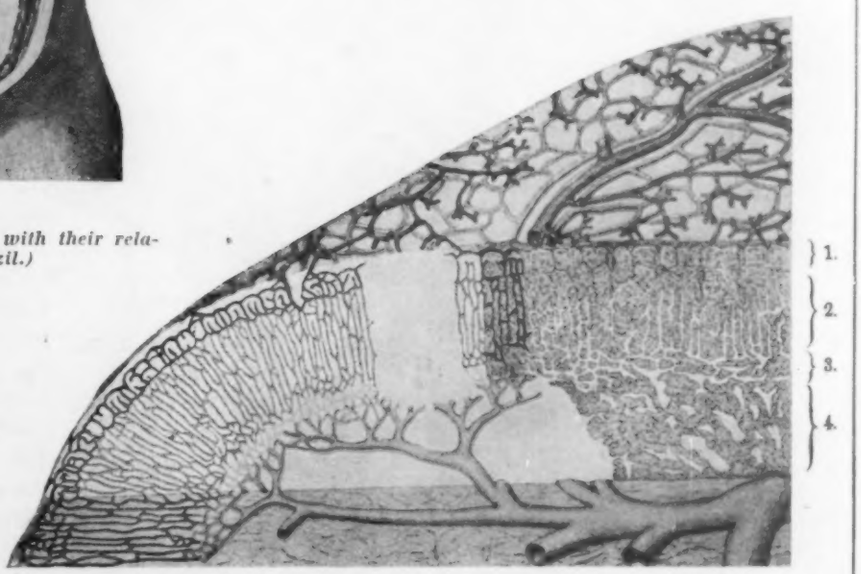


Fig. 223.—Reconstruction of a suprarenal gland showing at the left arteries on the surface and the great vein in the center. At the right are shown the gland cells: 1, 2 and 3 are the outer, middle and inner layers of cortex; 4 is the medulla. (From Cunningham, after Marshall Flint, William Wood & Co.)

being the flues and the straight columns of cells filling the spaces between. The spaces are so narrow and the straight radial blood capillaries so numerous that practically every cell touches on a capillary. The cells at this stage are full of fat compounds existing in droplets, which are all the same size in one cell but differ in size in different cells (fig. 224).

In acute fevers and after anesthetics and poisons the fat compounds disappear and many cells are killed, being replaced in three or four weeks if the patients recover by rapid cell division in the outer part of the middle layer. The inner layer is made up of irregular blood sinuses and correspondingly irregular cords and bands of old cells. Some of these in their old age get pale and dropsical; they die a white death. Others shrivel up, retain some lipoid, and contain dark fatty pigments; they die a dark death.

The cortex develops from an origin very different from that of the medulla. It is not nervous tissue at all, but grows from the mesoderm on the dorsal wall of the abdominal cavity. The medulla grows into the cortex during fetal life in man, but remains apart from it in some fishes. The exact nature of the hormone formed

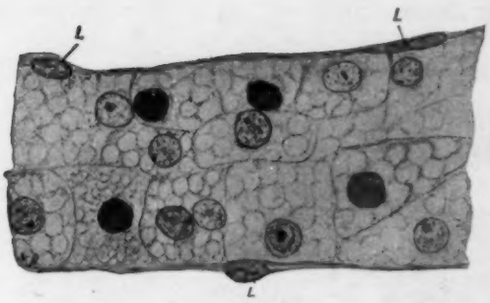


Fig. 224.—Cells from the middle layer of suprarenal cortex of an infant who died of an acute infectious disease. L, walls of capillaries. The spherules of fat compounds and the black or dusky nuclei are dead or dying. (From Maximow-Bloom, after Hoerr, Saunders.)

by the cortex is not known. Disease of the cortex, Addison's disease, is always fatal, with progressive muscular and cardiac weakness, intestinal disturbance, low blood pressure, and with a curious dark brown coloration of skin and mucous membranes. Animals deprived of cortex always die with similar symptoms; they can be relieved somewhat by the injection of extracts of cortex. These facts and the enormous amount of blood passed through it make it evident that some hormone is given by the cortex to the blood.

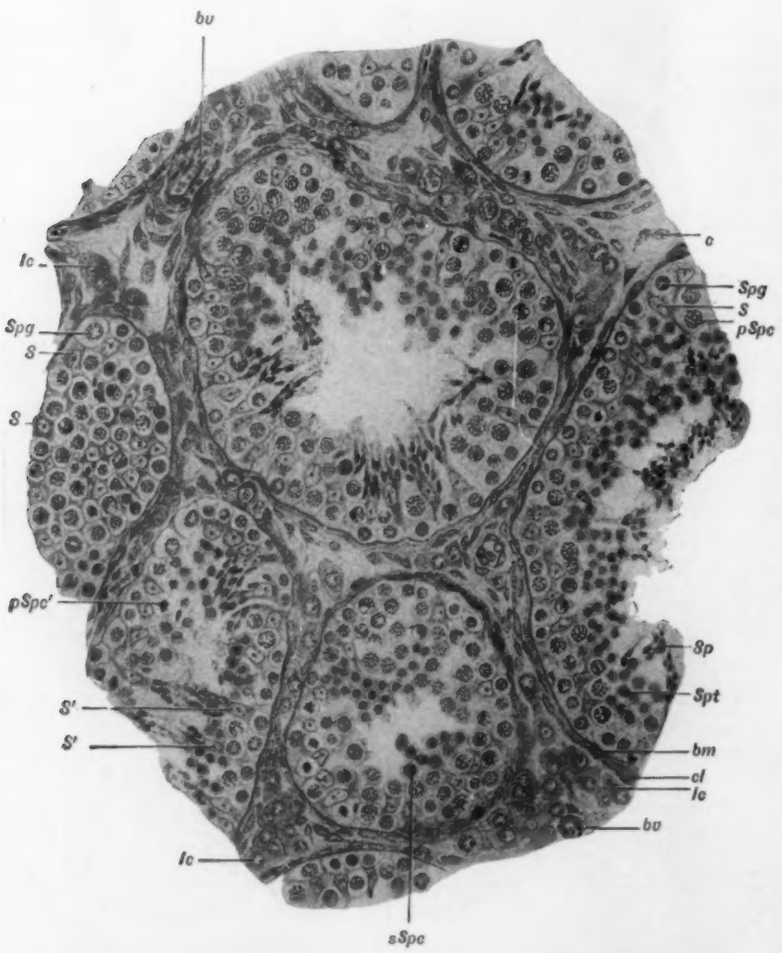


Fig. 225.—Section through a human testis, showing sperm-bearing tubes containing sperm cells, Sp, and supporting cells, S. Between the tubes are blood vessels, bv, connective tissue cells, c, and interstitial cells, Ic. (From Maximow-Bloom, Saunders.)

The ovary and testis, of course, produce the human eggs and sperm cells, but it has long been known that they do much more than this: they cause the development of those bodily and mental characters that are summed up in the words masculinity and femininity. The masculine qualities of greater size and strength, deeper voice, the slower and more prolonged growth of bones, the beard and the mental qualities of aggressiveness and combativeness are lost or never developed fully if the testes are diseased or removed. Similarly, feminine qualities depend on the activities of normal ovaries. These glands produce some drug, or hormone, that secreted into the blood influences the life of many parts of the body and the mind. Much careful study of the structure of these glands has sought to find the nature of the hormones and the cells in which they are produced.

In the testis each of three types of cells has been believed by some investigators to be the source of the hormone. These cells are shown in figure 225. This is a section of the testis of a normal man. It is apparent that it is composed of tubes, of which the section shows the entire circumference of two and parts of seven others. Between these tubes, which are nearly circular in cross section, are angular spaces communicating with one

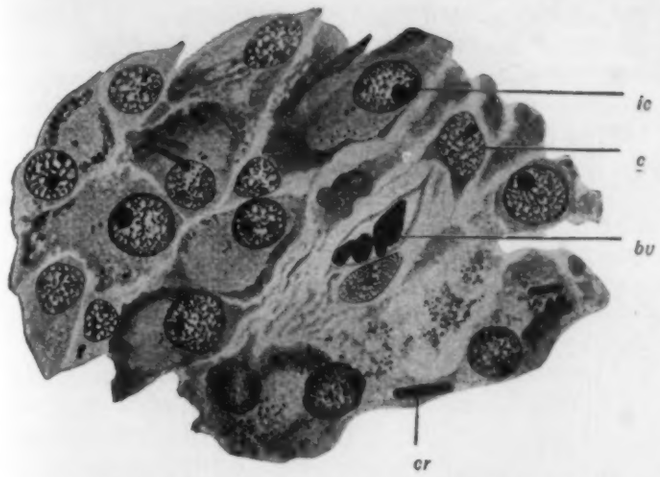


Fig. 226.—Interstitial cells from the testis of a young adult, with their adjacent structures: ic, interstitial cells, believed by some to be the source of the hormone producing "maleness"; c, connective tissue cell; bv, blood vessel; cr, crystal.

another and filled with cells and blood vessels (bv). In the central cavity of the tubes the ripe sperm cells (Sp) are seen swimming in fluid. Most other cells in the tube are unripe developing sperm cells, which in order of their development are marked spg (the youngest ones), pSpc, sSpc, Spt, and Sp (the fully ripened ones). Within the tubes are also other cells marked S; only a few are marked. These are large cells attached to the connective tissue wall of the tube. They are called Sertoli cells. They are large and tall; they stand up in the interior of tubes like the mooring towers for dirigible balloons, and the sperm cells as they grow and move toward the center are attached to them (for supplies) and cast off from their tips when fully ripe.

The Sertoli cells contain fat compounds, somewhat like those in the middle layer of the suprarenal cortex and each contains one long spindle shaped crystal of unknown composition.

In the spaces between the tubes, besides the blood vessels and ordinary connective tissue cells, are other cells of a special kind. These are the renowned interstitial cells (ic), shown especially well in figure 226. The large clear area in each cell is very much alive: it is called the attraction sphere. Around it the protoplasm is filled with granules, crystals, colloid droplets and fat compounds again somewhat like those in the suprarenal cortex. These cells are probably much modified connective tissue cells.

An opinion widely held is that the hormones of maleness are produced in the interstitial cells—they have even been called the interstitial gland, though they are not assembled into a single mass. Many capable anatomists, however, believe that the hormones are produced by the young sperm cells, and some ascribe their formation to the Sertoli cells.

The hormones of femaleness are produced in the ovary. This gland, like the testis, is formed originally in the embryo on the posterior wall of the abdominal cavity close to the origin of the suprarenal cortex. Later it moves downward to its final position on the upper lateral wall of the pelvis (fig. 227). Under its capsule, which consists of a single layer of epithelium cells on the surface and connective tissue beneath, it contains at birth 50,000 or more little spheres (follicles), embedded in connective tissue packing. The vessels and nerves enter at one spot on the upper border and their branches run in the connective tissue.

The spheres contain the egg cells, one in each, surrounded by attendant cells, which have grown in before through the capsule from the surface epithelium cells. Thus there are in the two ovaries, right and left, at birth about 100,000 egg cells. All but 400 are destined to die inside the ovary after growing up only partially. The largest sphere (Gf in fig. 228) is one of the 400 (200 in each ovary) which grows up completely. The egg cell may be seen near the center of the sphere. It is very large and is surrounded by attendant cells quite small in comparison. These ripe spheres contain much fluid (white in the picture). The ripe egg cell, or ovum, inside the sphere is a huge cell $\frac{1}{250}$ inch or more in diameter and 250,000 times as large as the sperm cell of the testis. The little spheres begin to grow up in the ovary at birth, but none grows up entirely till menstruation begins. Before that they grow a little, then the ovum dies; then all the rest of the

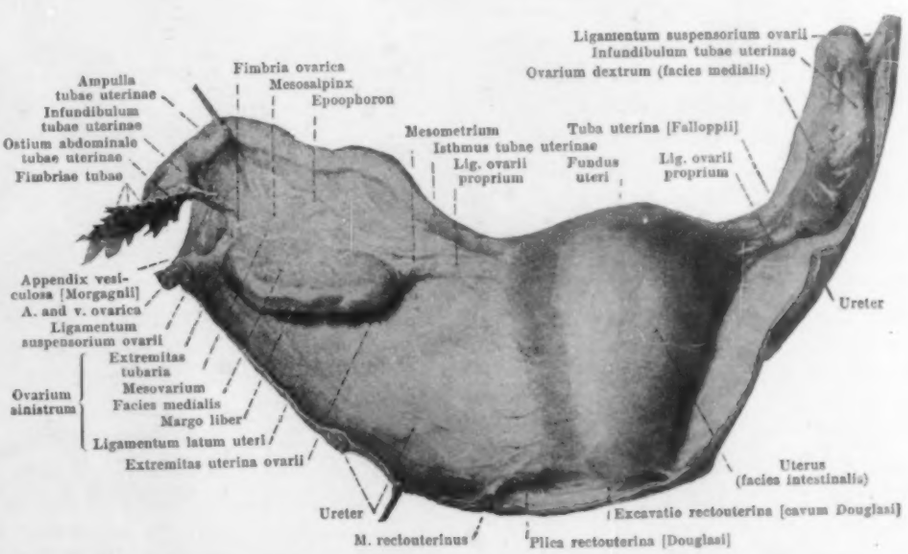


Fig. 227.—Uterus, fallopian tubes and ovaries, viewed from behind. On the right the parts have been left in their natural position, on the left the ligamentum latum has been unfolded.

sphere breaks up and disappears. But at about 14 years one sphere and ovum in one ovary grows up completely, and each two months thereafter for thirty-three years or more, one ripens completely in each ovary. The right and left ovaries alternate, so there is one ripe every twenty-eight days. When ripe the sphere is so big that it touches the surface of the ovary in one place, and bursts through it. The egg cell and fluid are thrown out; a few of the attendant cells stick to the ovum, which then goes down the fallopian tube to the uterus. On the way it may meet a sperm cell, unite with it and become a human being. Each little sphere when it starts to grow up, grows fast. It becomes entirely ripened in fourteen or fifteen days (if it ever does). But 49,800 of them in each ovary never do become entirely ripe. They grow more or less and die. In the picture are many of intermediate size, partly grown. None of them get big enough to contain any considerable amount of fluid till the age of menstruation.

When the ripe sphere bursts and the ripe ovum with the fluid and a few attendant cells are thrown out, most of the sphere remains and there is a hole on the surface of the ovary. The hole closes by a scar—an old ovary may have 200 scars. The sphere, minus its ovum, has still a curious history—curious because this history depends on what happens to the ovum, which was once in the sphere, but which is now either far away in the uterus growing into a human being, or else dead and thrown away with the menstrual blood. The action of hormones is different in the two cases.

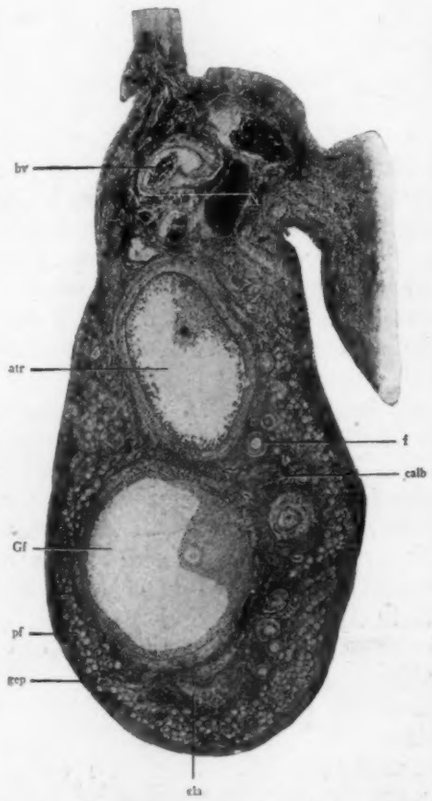


Fig. 228.—Section through the ovary of a monkey; gep, surface germinal epithelium; pf, young immature spheres (follicles); f, growing follicle; Gf, follicle almost full grown; atr, dying follicle; calb, remnant of a follicle which burst several months earlier; bc, blood vessels. (From Maximow Bloom, Saunders.)

The sphere remaining in the ovary consists of a capsule made of the connective tissue of the ovary, and within it a mass of attendant cells left behind when the ovum was thrown out. It does not collapse. Loose connective tissue fills the central cavity; the attending cells multiply; they become a corpus luteum, or yellow body. The corpus luteum looks something like a suprarenal gland, especially since its cells contain fat compounds similar to those in the middle layer of the suprarenal cortex. At each succeeding menstruation there is bleeding into the corpus luteum, and that stimulates the degeneration and absorption of it. After eight months nothing is left but a scar unless the uterus contains the embryo resulting from the ovum. If it does there is no menstruation, and bleeding and degeneration are much delayed; the corpus luteum grows till it may be nearly an inch across and lasts till after the birth of the baby; then it degenerates.

Which of these structures produce the drugs (hormones) that cause the "femaleness" of body and mind? It might be produced by (1) the ova, (2) the attendant cells or (3) the fluid in the big riper spheres (follicles). Some histologists think it is produced by cells between the spheres—interstitial cells like those in the testis. But there are very few—sometimes none—and those that do exist come from degenerating spheres. There is good evidence that it is in the fluid (number 3 above), which is formed in considerable quantities only during the thirty-three years of greatest activity during which menstruation persists. There is evidence that the great corpus luteum (yellow body) which persists in the ovary in case of pregnancy till the baby's birth forms hormones that inhibit the ordinary female sex hormone.

What makes the yellow body grow? Probably hormones coming from the uterus or from the placenta which attaches the fetus to it, and which may act directly on the ovary or more probably indirectly by way of the hypophysis (anterior lobe), the hormones of which stimulate the growth of the little spheres and their egg cells. The suprarenal cortex furnishes hormones which stimulate the testis and so accentuate maleness; they seem also to stimulate the yellow body, which inhibits femaleness.

It is evident that these drug-producing glands act on one another and on the parts of the body in a complex way. One Danish student remarks that no one can think straight about the structure and working of the body for more than five minutes at a time: he must then try out his ideas by scientific experiment on human beings or on laboratory animals.

Experimentation requires patient and skilful labor, but what is found out is true—it works. It affords a basis—the only basis—for successful efforts to make adjustments when the parts go wrong—to relieve suffering in men and animals, to preserve their health and lives.

(THE END.)

The Child and the Doctor

By Don C. Lyons

JIMMY starts crying at the doorway of the doctor's office and is dragged into the office screaming and kicking. His entrance, while dramatic, is not the type likely to create the best impression on the doctor. The physician may immediately decide that the child is wholly unmanageable and treat him as quickly as possible in order to get rid of him.

Most of the Jimmies have been prepared for the ordeal of medical treatment or dental operations in entirely the wrong way. There have been threats of what may be done if they do not behave and misunderstandings about what may happen. The result is that they come to the office ready to show the world that they have minds and voices of their own.

Children's doctors and dentists are now trying to make their waiting rooms pleasant places for their young patients. Wall decorations, attractive furniture and juvenile books and magazines are in evidence. Above are pictured the waiting room and the playroom at the children's clinic of Northwestern University Dental School, Chicago.

What makes so many children obstreperous, disobedient and terror-stricken patients? No physician or dentist can treat such cases to the best of his ability. Temporary measures alone can be used, which means that the results will not be entirely satisfactory. Does the fault lie with the child, the parents or the doctor? Usually all three are to blame, but if the child's instinctive reactions are understood by the parents many of the difficulties will be ironed out.

Just why is it that Frankie, who plays with Jimmie, loves to come to the dentist and thinks his physician is a good old scout? Each child may be said to have an individual difference of greater intensity than that of the adult. As we grow up, many of our individualities are blunted by contact with the bumps of life. Nearly all adults react to similar stimuli in a similar manner, if of course they belong to the same race and have similar environments. This is not true of the young child. His reactions are more fundamental.

Most of the reactions of young children are based on instinct, habit or association. Instinct is part of the child's equipment at birth and it is necessary to develop habits and associations that will help to govern instinct. While it is instinctive to fear certain things, it is easy to overcome those fears by the correct associations. Frankie has learned to associate his doctor with something pleasant, just as he has associated a piece of candy with a pleasing taste. Jimmie, his little playmate, has still the instinctive fear of being hurt or of finding something unpleasant. He has not learned to block that fear. It rests with the parents to teach the child to associate health attention with something pleasant, not with pain or vague terrors. He can be taught that the doctor is his friend.

During childhood, life is full of little fears. Some of these the child learns do not need a defense, but it is through a process of trial and error. For example, the child may fear the first taste of carrots or of any other vegetable. Many parents make the mistake of not insisting that the child take that taste and overcome his fear. Fear of the untried takes possession of him at the doctor's or dentist's office. At first sight the cotton roll that the dentist uses sends many little patients into tears; these are soon washed away when the child finds that it is soft. The mother might then call her child's attention to the fact that it looks like the piece of chalk he was using on his blackboard the same day. When the child learns that this is an experience that does not need a defense, that the fear is needless, the operation can proceed. One must insist, however, that the fear be met and overcome.

From this it is easy to see how important it is for parents to teach the child which fears may be developed and which should be forgotten. It is just as easy to teach the child that if he pulls kitty's tail pussy is likely to scratch, as it is to teach that if pussy is petted she will purr and sing. The same principle should be applied to the desirability of health.

Unfortunately, or fortunately as the case may be, one of the greatest instincts is mimicry. It governs most of the child's early developments. Parents do realize this, but it is so commonplace that they do not place sufficient value upon it. Nearly all play is mimicry. All physicians, dentists and public health workers will admit that their best behaved child patients have parents who are their best mannered adult patients, and the screaming terror of a child belongs to the mother who asks in her first tremulous words, "Oh, doctor, will this hurt?"

Ewing Galloway

A school health parade featuring sound teeth and giant toothbrushes.

Knocking at Your Door

By

W. W. Bauer

Plodding a weary way through all kinds of weather, the public health nurse is always on the job.

YOU see her almost every day if you live in a city, even in the smaller cities. In the country she is less in evidence, but even there she is not an unfamiliar sight. If she drives a car, it will likely be one of the smaller and lighter varieties. But often enough she is on foot, plodding a weary way through all descriptions of weather and temperature, laying aside the frills and fashions of the day for a trim uniform, always on the job. She may be old or young, but in either event she is the friend of young and old. About many people she knows much and tells nothing. She comes into the home as a guide and counselor, departing with a cheery farewell and a promise to return if she is needed. Unlike proverbial opportunity, she comes knocking at your door again and again even though you may turn her away. If you are wise, you will open wide and give her welcome. She brings you messages that help to open for you new vistas of a larger and happier life. She is your very good friend. She is the public health nurse.

The Right Kind of Public Health Nurse

There are, of course, many kinds of public health nurses, just as there are many kinds of grocers and cobblers and mechanics and policemen and Chinese laundrymen. I am talking about the best kind of public health nurse. There are other kinds, but they are not the most numerous, they are not in good standing with the kind I am talking about, and they are growing fewer. So if your experience does not check up with my description, you may know at once that you were not dealing with the right kind of public health nurse.

Not long ago I had a conversation with an indignant public health nurse. Some one had asked her what a public health nurse was supposed to do, anyway, seeing that she could not diagnose, could not prescribe, was not permitted to recommend doctors by name or tell which hospital was best, could not get food and clothing for a poor family, and could not recommend a priest for the man who was dying. Yet the question was a natural one. What could possibly be the use of a person who was hedged about with so many don'ts? Were there no do's connected with her profession? What good is she, for example, to parents of small children?

What She May Not Do

The nurse is paid by the community in one way or another. Some nurses are employed by health departments and some by boards of education. The salaries of these help to make up your tax bill, and you cannot get your money's worth out of that item unless you know what it is all about. Then there are the public health nurses employed by the tuberculosis societies or child welfare committees, which ask for your contributions. You ought to know something about them, so you may know that your money is being wisely expended. And, last, there are increasing numbers of nurses employed by industrial organizations of one kind or another, who may perhaps serve you and your family if you know how and when to call on them. The ethics of public health nursing touches your home and mine closely, either for benefit or damage, depending upon what we know about how to use the nurse to our advantage and upon what kind of a nurse she is.

First, let us discuss what the public health nurse may not do, and the reasons for these rulings.

The public health nurse may not diagnose. That is simply because she is not a physician. But, you say, my neighbor often tells me what she thinks is the matter with me. True, and if she is right she has made a lucky guess. Of course it doesn't require a great deal of acumen to diagnose a stomach ache. But there are stomach aches and ruptured appendixes and gallstones and kidney colic and a long list of

other things besides green apples that can make the stomach ache. The nurse has learned that diagnosis is the doctor's job, and in avoiding it she renders one of her greatest services—she protects you against unqualified advice. So that don't is really a do.

She may not prescribe. No, not even a laxative, which you do not hesitate to take on your own prescription or a pain tablet with which you likewise are free to dose yourself. She knows that an apparently innocent dose of castor oil, plus a sick appendix, may make an explosive mixture that will leave the patient in the cemetery, and that covering up pain with drugs may mask serious conditions until it is too late to do anything about them. She knows that the selection of medicines from the huge and varied array of available drugs, many of them dangerous unless intelligently employed, is the responsibility of the doctor, who is educated for that very purpose. She knows that when it comes to making a bed or soothing a restless patient, she can give the doctor cards and spades and beat him out of sight. No need for her to try some one else's job when she has so important a one of her own. And that is more than just courtesy among the professions. It is based on the fact that so and only so can you get the best service out of these professions, which exist for you and for you alone.

To whom, if not to the public health nurse, should you be able to turn for information as to who is the best doctor, for example, to care for a maternity case, to remove a pair of tonsils or to fit glasses? Should not the experience of the nurse be available to guide people away from incompetent and fraudulent practitioners?

Your neighbor often diagnoses your pain, but there is a long list of things besides green apples that can make the stomach ache.

And again the answer is No, because this function can better be undertaken by the local medical society or the hospitals, which can show by admission to membership or appointment of men to their staffs whom they endorse and whom they reject. The nurse can serve better by attending to her own business and doing her best at that. There is enough of it left even after subtracting all the don'ts to keep her more than busy.

It follows logically that if the nurse is not to be regarded as a source of endorsement for individual doctors, she should not be asked to choose for the patient among reputable hospitals. And it need scarcely be said that to recommend a change of doctors or hospitals is interfering with the free choice of the patient, who possesses the right to provide for himself and his dependents such medical attendance or substitute therefor as his judgment dictates, whatever we may think of his choice.

As to recommendation of religious ministrations of a particular sect or church, it seems almost ridiculous to expect of the nurse what we would not tolerate even from closest relatives. It is her duty to be sympathetic, impartial and helpful toward all religious views, a positive commandment in her code, and by no means the negative restriction that to many persons it appears to be at first glance.

What She Does

These principles, instilled into the nurse in every hour of her training, are not merely of passing interest to you and your family. Being the characteristics that make her what she is, they are the factors that determine whether your money is buying real service or an inferior counterfeit thereof. The magnificent opportunities offered by her profession open the door for service of inestimable value, but they also permit her to do much harm if she is not thoroughly grounded in the ethics of her profession.

Having seen what she is not, may we now look at what the public health nurse is. She is the backbone of any public health program worthy of the name; she is the interpreter of the physician to the layman; she is the liaison between the headquarters and the fighting line of control of contagious disease; she is the eyes and the ears, the hands and the feet of the health officer; she is the purveyor to the people of the results of research; she is the health guardian of the school child, the runabout and the infant; she is the messenger of hope to the tuberculous; she personifies the community's acceptance of the statesman's first responsibility, the care of the public health. She is all these things because she knows, accepts and discharges her obligations as one member of the team that includes the physician, the nurse, the engineer, the laboratory worker, the educator and the inspector who make up the public health department. Her obligations are translated into specific functions, of which the more important may here be briefly reviewed.

Most cities and counties first employed the public health nurse in epidemic emergencies, and

having had a sample of what she could do for them, kept her on and multiplied her numbers. Contagious disease control remains everywhere one of her most important functions. How she can discharge this duty under the limitation of

The nurse teaches the housewife how to clean up after quarantine.

not being allowed to diagnose, is a puzzle to many. There is really no mystery about it. Her training enables her to distinguish the sick from the well; suspicious cases are referred to a physician for diagnosis. She administers the regulations laid down for her guidance by the state health department or the legislature. All this is done under the direction of the city or county health officer, or in the case of the county nurse working alone, under the direct supervision of the state board of health.

Teaching Mothers

She does more than merely administer regulations. By her example and her instruction she trains the mother to protect the well children in her family from the spread of the contagious disease that has attacked one of them. She spreads information concerning vaccination against smallpox and protection against diphtheria. She knows that whooping cough is dangerous, especially to babies, and that vaccine for it is of doubtful effectiveness in prevention; she calms the frantic mother whose child has been bitten by a dog suspected of rabies with the knowledge that there is plenty of time and a sure protection if the dog proves really mad.

She is the guide and the friend of the families who are inconvenienced by quarantine, and she gets them out of it as fast as she can with safety to the community. Then she teaches them how to clean up after the recovery of the patient, so that others may be safe. She needs no diagnosing power to do these things; she needs only the more priceless qualities of patience, friendliness, tact, perseverance, alertness, common sense, humor and tirelessness.

She serves you by carrying her contagious disease prevention program into the schools, where she multiplies her personality by enlisting the teachers and the principal as her allies. She watches for children with coughs, with colds, with fever, with pain, with skin eruptions, for children who are pale or flushed, listless or irritable. She sends them home, for she knows that these may be the early signs of contagious disease cases from which epidemics spring. She leaves the diagnosis to the doctor; her duty is done when she sounds the alarm upon suspicion. She follows to the home the children who are absent, and often discovers there cases that have not been seen, and but for her would never have been seen by a doctor, and would have returned to school while still in the contagious stage, spreading their infection to others—perhaps to yours!

Aside from her work with contagious diseases, the nurse has other duties in the school. She helps to supervise the general sanitation of the school building, sees that there are plenty of towels and soap in the washrooms, and assists the teachers in dealing with families whose children habitually come to school unclean or infested with vermin.

In the Schoolroom

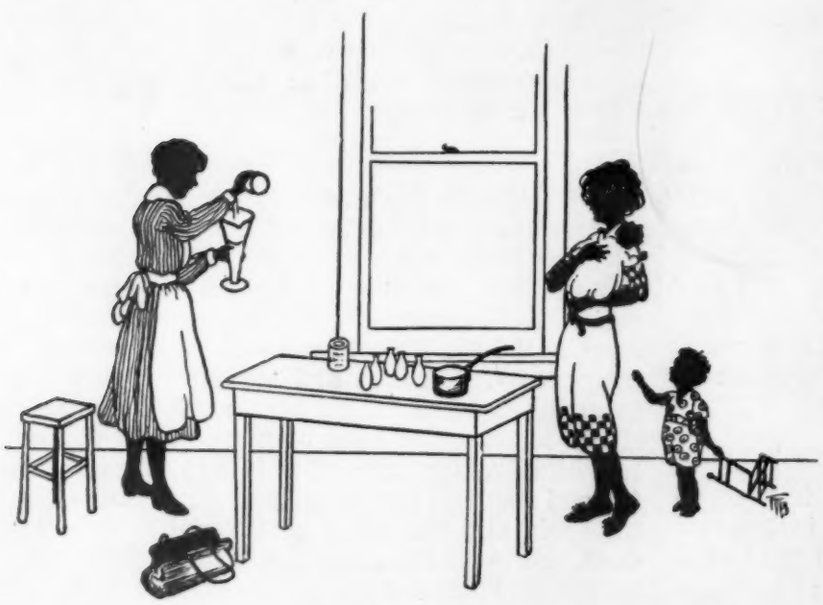
The nurse in the school is greatly concerned with constructive health work for the children, as distinguished from the more negative function of preventing the contagious diseases. She assists in the weighing and measuring of children and in getting reports of underweight to the parents. She is sometimes improperly asked to make physical examinations. This she does, if she is the right kind of public health nurse, unwillingly, because she knows she is not trained for that sort of thing. That is the doctor's job, and the nurse should not be asked to do it. But when the doctor has made the examination and pointed out the health needs of the child, then she is quite willing and able to interpret the report to the family, to encourage correction of defects discovered, and if necessary to put the family in the way of receiving aid in making corrections. But she does not furnish the aid herself. She turns that over to the trained social worker who will know just how to give exactly the aid which is needed and to which the family is entitled, without pauperizing them or undermining their independence and self-respect. This is another field in which others than the nurse can give you better service when you need it.

If there are special classes in the school for children below par in health or if nutritional work is being carried on among the children, it is always a part of the nurse's duty to cooperate in such special health projects. Whatever

may be the activity, it must be directed by physicians from whom the nurse will receive her guidance in matters outside her own province and to which she will lend her invaluable aid in her own field. Application of the doctor's recommendations constitutes a full-time job.

Nurse Is an Educator

As the conception of a public health program broadens in the community, additional functions are added to the nurse's job. She may be called upon to serve you in programs for prenatal care, where she will work in closest cooperation with the medical adviser. Or a baby clinic may be opened, at which she will be the chief organizer and promoter of the work, as well as the interpreter of the orders of the attending physician with reference to diet, sunlight, sleep, clothing and all that goes to make up the health regimen of the well baby; it will also be her job to exclude from the clinic those who are not entitled to its service, such as sick babies and those whose parents are able to furnish such supervision at their own expense.



The demonstration of mixing a formula for your baby is truly a service.

Closely allied to programs for the health of the baby are those for keeping the preschool child well and fitting him for his first big job, which is school attendance. Tuberculosis and heart disease clinics, open air schools, venereal disease clinics and prevention work, mental hygiene projects, all call upon the nurse to exercise her special abilities in your behalf.

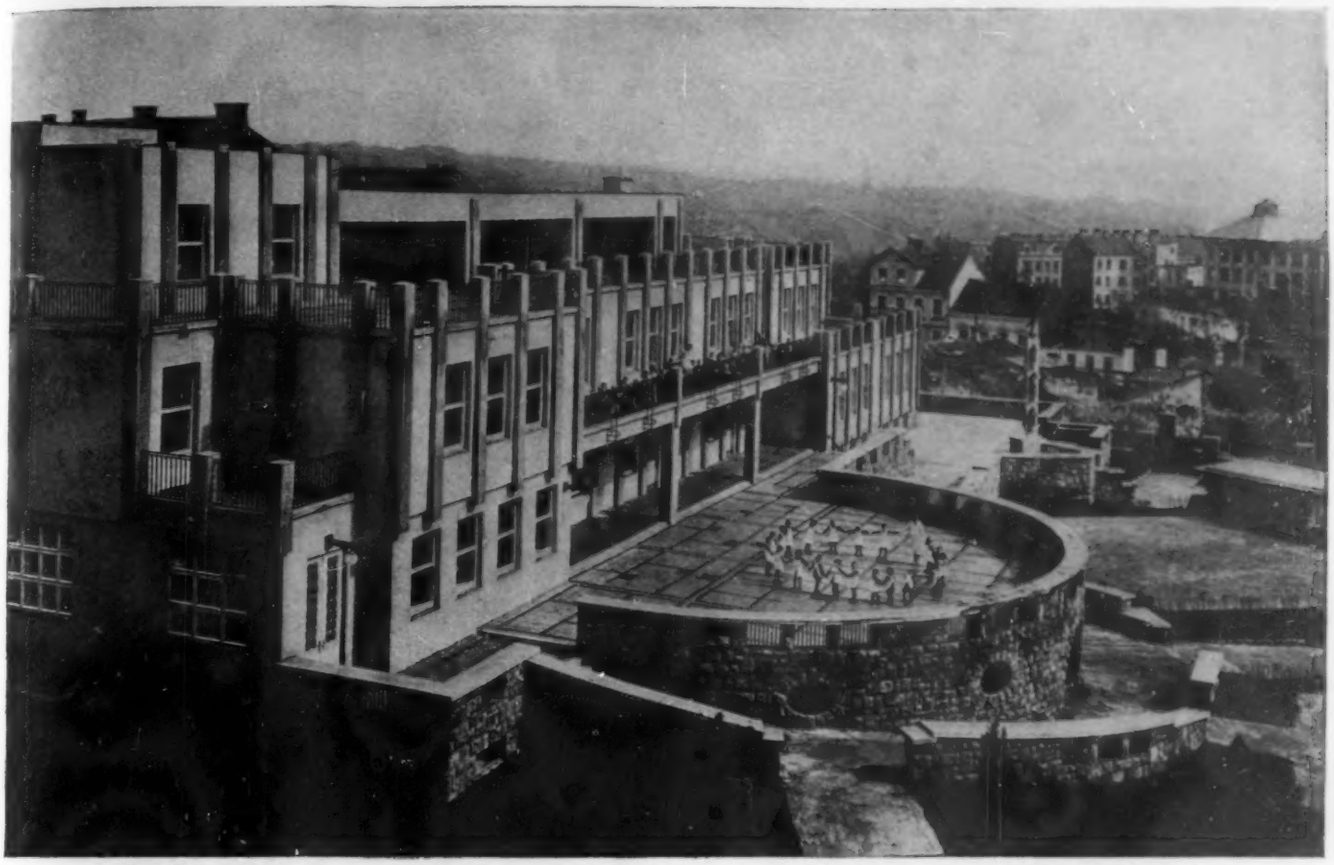
Even if one continues to look at the duties of the public health nurse from a narrow point of view, her educational activities loom large. You may call upon her to address groups of mothers or girls, luncheon clubs, industrial workers and other organizations. But from the larger point of view, her whole reason for being is that she is an educator. She is a teacher or she is nothing. Everything she does, though it may seem like service, is done with the educational motive. She serves to teach.

The visit to your home to demonstrate how scarlet fever can be kept from spreading through the whole family from the one who has it, is a service in itself, but unless it has left you with new conceptions of disease prevention, it has failed of its ultimate purpose. The demonstration of mixing a formula for your baby is truly a service, but if it has not taught you how to do it yourself the next time, it has been worse than useless, for it has created a dependent who will hang like a millstone around the nurse's neck until you learn to do the thing for yourself.

Supplements Your Doctor

Therein lies the key to the wise and productive employment of the nurses whom your community places at your disposal. They are willing to teach you if you are willing to learn. They are not intended to replace your doctor, but to supplement him. To the extent that your public health nursing service, whether in the employ of the health department, the school board, the tuberculosis society, the child welfare committee, the insurance company or an industry, educates you through service, it is a good public health nursing service and merits your commendation and support. To the extent that your nursing service strays from observance of underlying principles and embarks upon projects outside its proper sphere, it invites your condemnation.

A woman of my acquaintance once asked me why the department with which I am connected did not employ nurses who showed more energy. She had seen one of them, she said, plodding up a hill at a leisurely pace about 4 o'clock in the afternoon. I asked the nurse the next morning what she had done that day. Here is the list of her activities: visited four schools, inspected sixty-seven children for eruptions, head lice, filth and such things, weighed and measured the children in two classrooms, made three home calls for absent children and encountered a partially drunk and antagonistic father at one of these homes, placed one quarantine for scarlet fever and released another, took three throat cultures in one home at a doctor's request, and spent a quarter of an hour trying to cheer a dying consumptive who six months before had ordered her out of the house for telling him that he needed sanatorium care; all this in one day by street car and on foot.



CHRISTMAS GIFT TO VIENNA'S CHILDREN

Poor children of Vienna receive the finest care the city affords in this imposing home that has just been completed. Below is shown a group of children enjoying their dinner on the balcony.

Photos by Pacific and Atlantic

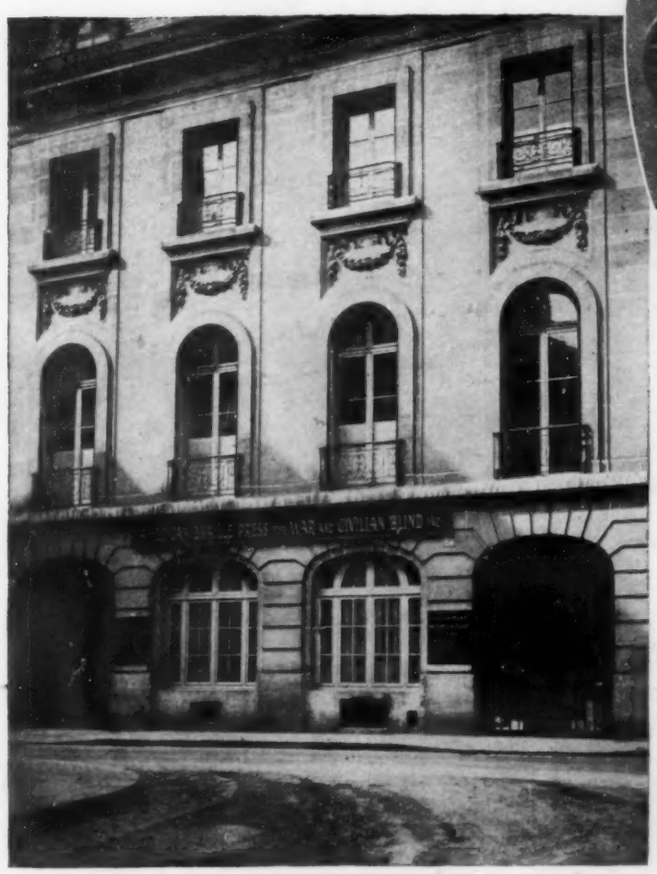
All photos by Pacific and Atlantic

TAKE ELECTION TO SICK VOTERS

Special ballot boxes were set up in Berlin hospitals to allow the patients to vote in the September election.

NOT A SPOOK

A Yale football player was saved to his team during the season just past by this ingenious mask, which was designed not to frighten the opposing team but to protect the player's broken nose from further pommeling.



PRINTING FOR THE BLIND

Literature, art, music, even a daily paper, are turned into Braille at the Braille Press in Paris. The entire staff, technical and editorial, is composed of sightless persons.

Pacific and Atlantic

OUTDOOR PLAY IS PROVIDED FOR CHILDREN of Moscow in playgrounds like this.

THESE Russian peasant women are students in the course of training organized by the national health department for nurses and they are to conduct nurseries in the collective peasant's households.

Ewing Galloway

BELOW are shown the three handsome grandchildren of Russia's famous novelist, Count Leo Tolstoi.

Pacific and Atlantic

The Adventures of LITTLE HOP HARE

By Marguerite Gode

ONCE upon a time there was a very little rabbit and because he was so very little his great-great-grandmother named him Little Hop Hare. He lived with his brothers Skippity Hare and Hippity Hare in a dark, damp sand bank under a tired, old fir tree.

Every evening at 11 o'clock this very little rabbit climbed into his tumbled-up bed under the eaves and every morning at 11 o'clock he climbed out again.

Then he sat all the rest of the day on the doorstep and wished and wished he were some one else.

Sometimes his poor little head ached so hard he did not even bother about wishing that. Wishes somehow never come true no matter how hard you think about them.

Hippity Hare and Skippity Hare were unhappy too. Why, they even forgot how to smile and spent so many hours frowning that ugly little crisscross wrinkles had begun to appear on their soft, whiskery cheeks.

"What ugly little rabbits," said Mrs. Brown Bear one day as she passed by on her way home from the bakery where she had gone to purchase a honey roll. "I wonder why they don't visit the beauty shop in Rabbit Vale and have their faces lifted."

Now it happened that Little Hop Hare was lying in the shade of the blueberry bush in the garden and his sharp rabbit ears heard her thoughtless remark.

What she meant by face lifting he did not know. His own face seemed very firmly fastened on to the front of his head and try as he might it gave no evidence of having slipped the least bit.

He told Hippity Hare about it and he in turn told Skippity Hare but they were as puzzled as Little Hop Hare himself. You see it was the first time they had ever been called ugly and even little bunnies prefer to be beautiful. All of them were upset about it.

In order to determine whether Mrs. Bear was right or wrong they looked into their own kitchen mirror, which had hung behind the door ever since Father Rabbit went away many years ago.

There they saw three of the crossest little faces they had ever seen peering back out at them.

"Dearie me," they cried in their most rabbity voices, "Mother Bear is right after all. We are three of the ugliest little rabbits in Blue Shadow Woods."

And they all sat down on the doorstep and began wishing they were beautiful.

But, as I have said before, wishes seldom come true.

So it was decided by all that a trip should be made to the beauty shop in Rabbit Vale for the purpose of having their faces lifted though they still did not know what face-lifting was.

It was several hours past noonday by the sun man's watch when they came in sight of the village of Rabbit Vale.

Little Hop Hare's head was aching so painfully that he was almost tempted to turn back before they had reached the edge of Moondown Meadow, just sixty-six hops from the old fir tree.

But the idea that he would always remain a very ugly little rabbit urged him on.

"Here we are at last," grumbled Hippity Hare

as they reached the spot of country where the cobbled street of Rabbit Vale began, "and I am of the opinion it is only the end of a wild goose chase."

Little Hop Hare and his brother Skippity paid no attention to his remark. At that moment they were much more interested in an important little sign board that was pointing them onward up the hill.

One dozen bobs later they found the beauty shop. It was a quaint little building full of peakity steeples and pointed gables that climbed this way and that way all over the wide, slanting roof as if they were running races with one another.

The door was wide open on its hinges and the three little rabbits bobbed inside.

At a spindle desk sat a fat, furry little rabbit gentleman dressed in a long white apron like the one their great-great-grandmother wore in her kitchen at Pine Cone cottage on the farm.

When he looked up at them over the tops of his tortoise shell glasses his eyes were all twinkly like little stars.

"Good day, my little friends," he said in the silvery voice. "What can I do for you?"

Hippity and Skippity waited for Little Hop Hare to speak.

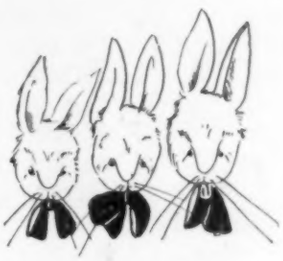
"We have come to have our faces lifted," he said so softly that it sounded almost like a sniff.

The rabbit gentleman's eyes twinkled brighter than ever.

"Sit down," he said jerkily, "and I will take up your case as soon as possible."

So the three little rabbits sat down on the three legged stools in the corner of the tiny office and waited for him to finish reading the closing chapter of a large book. "How to Be Beautiful" was the title.

When he had read the last line over at least five times and a half he said, "Before I can make you beautiful it will be necessary to ask the three of you three questions."


THREE OF THE UGLIEST LITTLE RABBITS

Little Hop Hare nodded. He hoped the questions would not be too hard.

"First, where do you live?" asked Dr. Rabbit, as he scratched his ear noisily with the end of his stubby pencil.

"Over in the dark, damp sand bank beneath the tired fir tree," the little bunnies replied almost too quickly. Dr. Rabbit looked very solemn.

"How many windows and how many doors does it have?"

"Only one window and one small door," answered Skippity bashfully. "That is why it is so dark inside."

The old rabbit shook his head and put a black mark on a piece of paper which was lying on his desk. Skippity thought it looked very much like the black marks little rabbits receive in school when they do not have their lesson.

The next question came so suddenly Little Hop Hare almost popped right off his chair onto the floor.

"And now, my little friends, tell me when did you brush your teeth last—yesterday or today—tomorrow or a week ago?"

"Why, I don't know," stammered Hippity, getting a trifle confused. "You see our tooth brushes were lost a fortnight ago, and it is very hard to brush one's teeth if one hasn't a tooth brush."

"Hm'm, I see," said the doctor, and he made another black cross on the sheet of paper before him, and it was bigger than the one before.

"And now for the next question, which is the last. What do you eat for dinner, breakfast and lunch, if you please?"

Little Hop Hare squirmed uneasily. Somehow Dr. Rabbit did not seem to like the answers.

"Walnut cake and acorn candy most of the time," he said reluctantly; "that is, if we happen to be at all hungry."

By this time Dr. Rabbit looked very much disturbed.

"No wonder you are ugly little bunnies," he said, "I suppose you have even forgotten that young folk should go to bed at 8 o'clock. Dear! Dear!"

And he began writing vigorously on the paper below the three black crosses.

"Here is your prescription," he said gruffly as he handed it to Little Hop Hare, "and now be off, I have other business to attend to."

It was plain to be seen they had been dismissed.

"But we came to have our faces lifted," whimpered Little Hop Hare, "for we wish very much to become beautiful."

"Then follow those directions for a month and look in your kitchen mirror," the old doctor called back as he disappeared behind a swinging door.

So Little Hop Hare and Hippity Hare and Skippity Hare hurried homeward feeling very much discouraged to think they were still just as ugly as ever.

As a last hope they decided to try out the old rabbit man's plans.

The next morning they rose with the sun and motored to the village for a carpenter whose business it would be to enlarge the doorway, and add at least six more windows to the old house, to let in fresh air and sunshine.

Although it seemed a foolish idea carrots and spinach and fresh juicy lettuce leaves appeared on the table at dinner time, breakfast time and even lunch.

Before long Little Hop Hare gradually came to prefer these green, tasty vegetables to walnut cake and acorn candy, which had been his diet ever since he was a bunny baby.

You see every wish of the old doctor's was being carried out, even to the purchasing of new tooth brushes and a nice new tub for daily baths.

Why, these little rabbits were kept so busy that they quite forgot to be miserable and almost before it could be realized Little Hop Hare's headache had completely disappeared. Where it had gone, no one knew and no one cared enough to find out.

On the thirtieth day of the month they reached the final order.

"Look in your mirror behind the kitchen door," it read.

So the little bunnies looked, and what do you think they saw? Three cross, ugly faces looking back at them? No, indeed; right from the inside of that dear old mirror they saw three of the most beautiful little rabbits you could ever imagine. And can you believe it, there was not one cross wrinkle to be seen. No, siree. They had vanished into thin air and left the rabbits looking happy and serene.

The next day they again made a trip to Dr. Rabbit's beauty shop in Rabbit Vale and each little bunny carried on his arm a basket full of fresh vegetables for the kind old fellow's table.

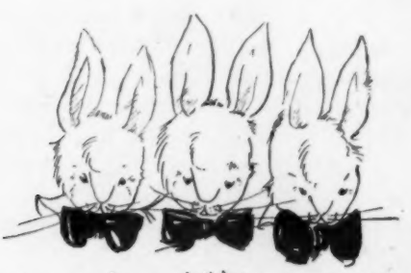
Hippity Hare carried ripe red tomatoes.

Skippity Hare carried fresh green spinach.

And dear Little Hop Hare, well, of course, he carried what he liked best of all—a big mess of juicy carrots guaranteed to bring good health and happiness to every one.

And that was the way the three little rabbits had their faces lifted.

Beautiful little rabbits, all of them, don't you think?



Beautiful little Rabbits

First Aid for Betty Ann

Betty Ann leaped high into the air and landed in the very middle of the pile of leaves.

By Dorothy E. Bresnahan

IT WAS a splendid day. The sun shone brightly and the ground was dry and hard. Mary Jane beamed with happiness that this particular day should be so fair, because it was Saturday, and Betty Ann, her playmate, had invited her to spend the day in the country.

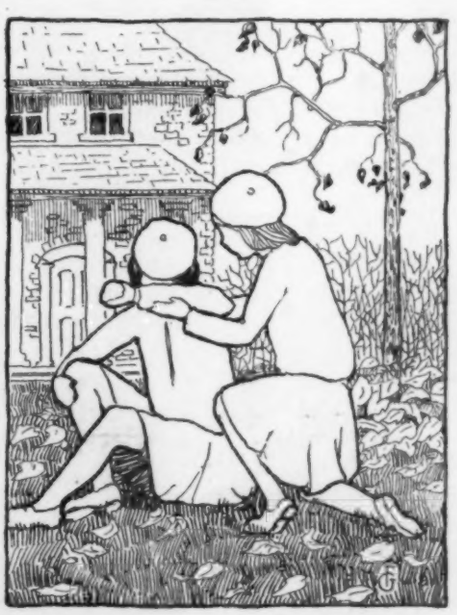
Mary Jane and Betty Ann snuggled up warmly beside Betty Ann's mother, who drove the blue car through woodsy roads. It was such fun to watch the squirrels and chipmunks scurry across the road, or to see their bright eyes looking at them through the brush.

In a short time they reached Betty Ann's country home. Betty Ann's mother unlocked the great door, and the children soon had their heavy coats removed and in warm, comfortable sweaters were running out to play.

The earth was covered with crisp brown and yellow and red leaves. It looked most inviting. The girls ran, laughing happily at the swishing sound they made in that beautiful leafy coverlet.

"Let's somersault," suggested Mary Jane; and somersault they did—forward and backward till the world seemed to somersault too, and they had to rest, lying on their backs and looking up at the blue heavens above. They did not stay there long, however, and were soon busy gathering the leaves into a tiny mountain near the fence.

"What fun!" cried Betty Ann, and then she leaped high into the air and landed in the very middle of the pile of leaves! "It's just like flying," agreed Mary Jane, as she landed right beside her little friend.



"My hands are bleeding, and just look at my knee," sobbed Betty Ann.

"Now, what shall we do?" said Betty Ann. "We could pretend we are horses and race to the house," proposed Mary Jane. "Good!" agreed Betty Ann. "Ready—on your mark—get set—GO!" And off they ran!

Mary Jane sped past Betty Ann and had almost reached the goal when she heard a loud cry from Betty Ann. She stopped as quickly as she was able and turned around. There was poor Betty Ann sprawled on the ground and holding up one injured bleeding hand. She had fallen on a big rock, which the leaves had covered, but not deeply enough to save her from harm.

"Don't cry, dear," said Mary Jane tenderly as she helped

her little playmate to stand; "I'm sure it isn't very bad."

But Betty Ann kept on weeping. "My hands are bleeding," she sobbed, "and just look at my knee!"

"Mother, Mother!" called Betty Ann, as the children went into the house. But there was no answer; her mother had gone to visit the farmer's wife who lived down the road. "Boo-hoo!" cried Betty Ann, "what shall we do? Oh, my hands; ouch!—my knee! Boo-hoo-hoo!" And she sobbed as though her heart would break.

"Hush!" said Mary Jane, "why, I know how to fix cuts so they won't hurt. Just show me your first aid cabinet, and don't cry any more; it isn't bad at all, wait till you see."

Betty Ann felt a little comforted, and she limpingly led the way to the bathroom. Hanging on the wall was a white box with a red cross on it.

"This is just what we need," said Mary Jane, as she opened it and saw what was inside. First she scrubbed her own hands and nails with soap and hot water and a stiff little brush. Then she took from the box some white gauze and a bottle marked Boric Acid Solution. She poured this on little squares of gauze and gently cleaned Betty Ann's hands and knee. Then she poured some of the liquid over the wounds.

Betty Ann watched with great interest as Mary Jane cleaned her injuries with boric acid solution on little squares of snow-white gauze.

Betty Ann was pleasantly surprised to see that her cuts were not so big after all.

"There, I told you so!" said Mary Jane as she saw her playmate's tears change to a smile.

"Why, it doesn't hurt any more," smiled Betty Ann; and she watched with great interest as Mary Jane dried off her injuries with little pats of snow white gauze.

"Now I shall put some iodine on each cut and you'll be just as good as new," and Mary Jane painted the injured parts with some brown liquid, which she took from a small bottle.

Just then Betty Ann's mother arrived and found her little daughter now smiling and rather proud of her treated wounds, which she held up for her mother to see.

"Why, children, what happened?" asked her mother.

"Mother, dear," cried Betty Ann excitedly, "I fell down and cut my hands and knee, and Mary Jane gave me first aid and made me almost well again!"

Her mother looked at Mary Jane, who was busily fitting the boric acid, iodine and gauze back to their places in the white cabinet. "I think you have treated Betty Ann's wounds perfectly," she said, "and in the air and sunlight they will heal in a little while. How do you know so much about first aid, Mary Jane?"

"Well," smiled the little First Aider, "Uncle Doctor says that even children should know about first aid, for if they do they can often help themselves and others; so all our family have learned first aid. I am just a Junior First Aider, but Daddy and Mother are Senior First Aiders."

"Oh, mother," cried Betty Ann, "can't we be First Aiders too?"

"I think it is most necessary, Betty Ann," answered her mother. "I shall ask Mary Jane's doctor uncle to tell us all about it some day very soon when we go into town."

"Won't that be wonderful!" exclaimed Betty Ann, "then I shall be a Junior First Aider, and know how to help people, too!"

Then Betty Ann thought of the little mountain of leaves! "First aid makes me feel so much better," she said, "let's play some more, Mary Jane." And out they ran into the bright sunshine.

NOTE: This story may be used in school as a lesson in health and safety. It may be made more interesting to the children if the teacher will demonstrate how Mary Jane treated her playmate's injuries.—D. E. B.

christmas jingles

by grace ellen glaubitz
drawings by riggs

Kitchens are places
That nobody should
Come to, unless
He is going to be good.

'Specially kitchens
Where grandmother bakes
Puddings for Christmas
And dark raisin cakes.

Even at Christmas
I'm well as can be,
'Cause grandmother cooks
What is better for me.

Jack Frost brought a
Christmas gift
To every one around.
He filled the clouds
With snow to sift
Down, down upon the ground.

But better yet,
Did not forget
To make things
'Specially nice.
He 'membered how we love
To skate, and spread
The creek with ice!

A snowman can't remember how
He came to be, or why.
A snowman never turns his head
Or blinks his charcoal eye.

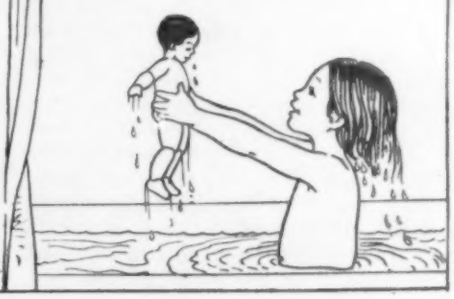
A snowman's very pale because
He never starts to play.
It serves the lazy snowman right,
I think, to melt away!

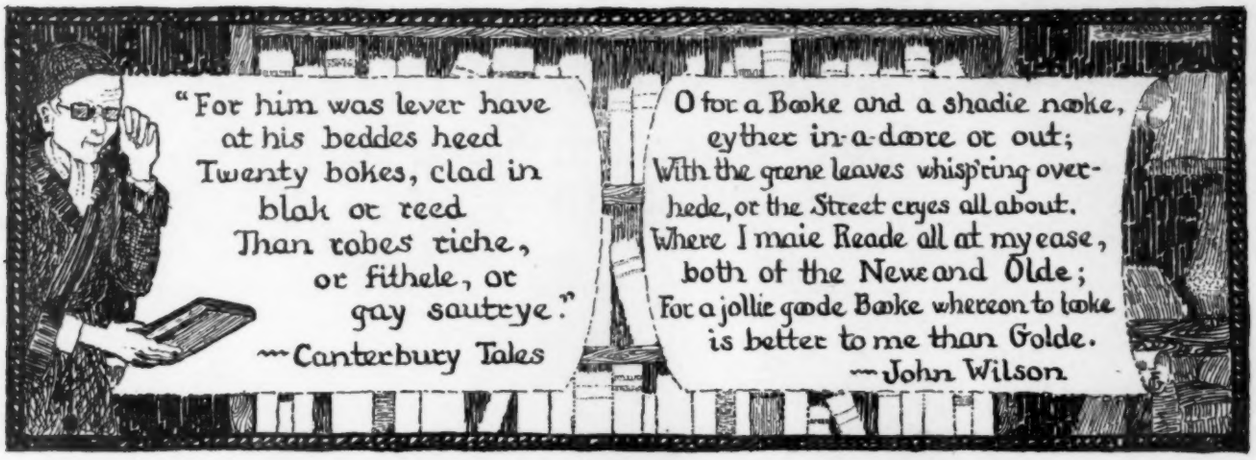
When Santa tiptoes
To my room
And finds me
Sound asleep,
And sees my dresses
Hanging up
And nothing in a heap,
When Santa sees I'm
Sweet and clean and
Happy in my bed,
I'm sure he'll bend
And press a kiss
Upon my sleepy head!

Betty Jean is
Very new.
She may watch me
While I scrub.
Betty Jean
Likes water, too.
Betty Jean jumps
In the tub.
It is strange,
But dolls can be
Just as good
And wise as we.
I shall keep her
Always clean
For I'm proud
Of Betty Jean.

Did you ever think about
What makes Santa's smiles pop out?
What could paint his cheeks so red?
Give him such a snowy head?

Must be Mother Santa's care,
Healthy food and winter air;
I'll live just like that because
Every one loves Santa Claus!




"For him was lever have
at his beddes heed
Twenty bokes, clad in
blak or reed
Than robes riche,
or fithele, or
gay sautrye."
—Canterbury Tales
O for a Booke and a shadie nooke,
eyther in-a-doore or out;
With the grene leaves whisp'ring over-
hede, or the Street cryes all about.
Where I maie Reade all at my ease,
both of the Newe and Olde;
For a jollie goode Booke whereon to looke
is better to me than Golde.
—John Wilson

Health Books for Christmas Giving

A BOOK at Christmas is as blessed to give as to receive, provided of course that it is the right book. Time was when current fiction was the staple gift from the booksellers, with sometimes a slender volume of verse to bespeak tender sentiments. But now that biography and travel and history and hygiene are of public interest, the problem of selection becomes at once more interesting and more complicated.

In the well balanced personal or family library there is a fair-sized shelf for health books, for under this heading come medical history and biography, health and hygiene, food and nutrition, mental hygiene, child care and miscellaneous topics relating to body and mind.

One cannot go far wrong in selecting for an intelligent reader one of several books in any of these fields. In mental hygiene are Dr. Karl A. Menninger's "The Human Mind" (Knopf. $5); A. Myerson's "The Nervous Housewife" (Little, Brown. $2.50); Joseph Jastrow's "Keeping Mentally Fit" (Greenberg. $3.50); H. A. Overstreet's "About Ourselves" (Norton. $3), and Alfred Adler's "Our Fear Complexes" (Bobbs-Merrill. $2).

Under health and hygiene there are interesting moments and valuable instruction in Dr. Logan Clendening's "The Human Body" (Knopf. $5); Howard W. Haggard's "What You Should Know about Health and Disease" (Harper. $5), and Jesse F. Williams' "Personal Hygiene Applied" (Saunders. $2).

Of general cultural interest are "Human History" by G. Eliot Smith (Norton. $5); "The Biological Basis of Human Nature" by H. S. Jennings (Norton. $4); "Doctor and Patient" by Francis W. Peabody (Macmillan. $1.50); "Microbe Hunters" by Paul DeKruif (Harcourt, Brace. $3.50); "Medical Leaders from Hippocrates to Osler" by Samuel W. Lambert and George M. Goodwin (Bobbs-Merrill. $5).

Any recent book on nutrition by Mary Swartz Rose, E. V. McCollum, H. B. Sherman, Lydia J. Roberts, Katharine Blunt or Walter Eddy is sure to be authoritative. There are several books on dieting with deservedly wide sale—"Your Weight and How to Control It," edited by Morris Fishbein and "Diet and Health" by Lulu Hunt Peters.

Authors of reliable books on child care include the late L. Emmett Holt, Max and Grete Seham, Frank Howard Richardson, Richard M. Smith, Douglas A. Thom, C. A. Aldrich and Smiley Blanton.

Other books eminently suitable for Christmas giving are reviewed by Dr. John M. Dodson, Dr. Claude P. Fordyce, Miss Mildred Whitcomb and Miss Lois Stice in the following pages.

M. W.

PIONEERS OF PUBLIC HEALTH

By M. E. M. Walker. Cloth. Price, 12 shillings sixpence. Pp. 270. Oliver and Boyd, Edinburgh.

BOOKS on the lives of men who have advanced the twin sciences of medicine and public health are no longer a novelty. With the acceleration of interest in health matters within recent years, however, it is fitting that the public should learn that the present state of knowledge did not break full fledged on a waiting world, but was won by tedious and often heartbreaking steps.

This collection of twenty-one sketches comes from England. Of the twenty-one men, twelve are British; four are from the United States; three from central Europe and two from France. Many of the names are familiar, but among them are several whose work has been little discussed in popular writing.

In addition to Sydenham, Jenner, Pasteur, Lister, Koch and others whose lives have been written many times, Mrs. Walker tells of James Lind, whose studies of scurvy relieved seafaring men from this devastating disease; of Sir John Pringle and Edmund Parkes, who worked equally great reforms in military hygiene; of Shattuck, Chadwick and Parr, the statisticians who by "making arithmetic argumentative" laid the foundation for present-day sanitary science based on vital statistics.

An emphasis on tropical medicine is attributable to the fact that the author drew her inspiration for the book from the names engraved on the façade of a new building of the London School of Hygiene and Tropical Medicine. Eminent among these are Sir Patrick Manson, called "the father of tropical medicine"; Alphonse Laveran, the discoverer of the malaria parasite; William Crawford Gorgas, sanitarian of the Canal Zone, and Sir William Leishman, who by his research on fevers, especially diseases transmitted through insects, made immense contributions to preventive medicine.

Mrs. Walker's style is pleasing and her material has been approved by medical authorities. Bibliographies suggesting further reading are appended to the sketches, which are sufficiently attractive to draw the reader on to the end of the book.

L. S.

GROW THIN ON GOOD FOOD

By Luella E. Axtell, M.D. Paper. Price, $2. Pp. 336. Funk & Wagnalls Company, New York, 1930.

DR. AXTELL is a successful woman physician who reduced her own weight 75 pounds without impairing her health. She has given in this book ways of getting thin by means of good hygiene and by the use of good food without reducing one's vigor or impairing one's looks. She says that "the idea that water is fattening and that the way to reduce one's weight is to drink as little as possible is a dangerous fallacy. Plenty of water is particularly necessary during weight reduction when large amounts of fat are being broken down and must be removed."

Dr. Axtell sweeps away all drugs and freak diets. She does not favor rubbing one's fat off by massage or sweating it off or reducing by taking drugs. Her method calls for just two things—the right food in moderate quantities and sufficient exercise every day. She offers tables showing exactly how many fat-producing calories lurk in every kind of food. Complete menus of healthful reducing meals for three weeks, three meals a day, and scores of original recipes, many of them delicious, are given. She indicates the amounts of "vital foods" one needs and the limitations of one's indulgence in the "fuel foods"—sugars, fats and starches. She has given an excellent explanation of food families and the chapter on "Tricks in Cookery" offers some clever and original material.

Different forms of exercise are detailed. The author states that walking helps in every reducing regimen, because the activity causes the fat to burn up, and she recommends it even if it makes one eat more.

The volume is authoritative, comprehensive and gets at the problem from a novel, practical slant. It is primarily intended as a guide for laymen, but should be of value to doctors, nurses and dietitians. C. P. F.

DOCTOR SEROCOLD

By Helen Ashton. Pp. 305. Price, $2.50. Doubleday, Doran and Company, Garden City, N. Y., 1930.

ELEVEN professional visits paid by Dr. Luke Serocold on Oct. 18, 1929, form the basis of a novel by Helen Ashton, a young British woman and a former medical student. From the death bed of his partner at 2: 30 a. m. until the birth of a baby at midnight of the same day, this family doctor pursues his daily round.

The task of writing a 300 page book about the ordinary events in an ordinary doctor's day seems staggering; in fact the author wrote the book in answer to her husband's challenge, when he declared the feat impossible. But Mrs. Ashton has made an interesting job of it.

Dr. Serocold is an old-fashioned practitioner—old-fashioned in that he is a type of family doctor that is fast disappearing. He knew the antecedents of all of his patients and had attended many of them since birth. He was old-fashioned in that he had reached an age in which he clung to the tried and shunned the newer professional procedures. The shadow of what he believes is his own death warrant hangs over him during the day, adding dread and suspense to humorous and tragic incidents that unfold in his patients' lives. In the end a delayed x-ray film arrives to convince him that he is not doomed, and the curtain falls on another day of service to humanity. M. W.

SEX EDUCATION

EARLY SEX EDUCATION IN THE HOME—WHEN? HOW? WHAT? By Catherine Cooke Gilman, Director, Parent-Education Department and General Secretary, Women's Cooperative Alliance. Paper. Price, 15 cents. Pp. 92. Women's Cooperative Alliance, Minneapolis, 1929.

A VOCABULARY FOR FAMILY USE IN THE EARLY SEX EDUCATION OF CHILDREN. By Catherine Cooke Gilman. Paper. Pp. 48. Price, 15 cents. Women's Cooperative Alliance, Minneapolis, 1930.

THE numerous contributions to the literature of sex hygiene that have appeared in the past few years have given parents and teachers a wide choice. Some of these tell a more or less pleasing and innocuous story in namby-pamby style carefully dodging discussion of important facts. Others speak a plain language that can be understood by every reader.

The two admirable booklets by Catherine Cooke Gilman present briefly, in frank and correct language, the truths that every mother and father should convey to their children if they wish to fortify them against the vulgar, misleading stories they are certain to hear.

Emphasis is laid on certain outstanding truths: (1) Education about sex and proper training in the care of the organs concerned must, to be effective, begin in infancy; (2) obviously, if this teaching is to begin so early in life, it is a function of the parents in the home (the home incidents of nursing, dressing, bathing and toilet habits furnish the most important elementary teaching material for early sex education); and (3) plain speaking about the matters of childbirth, nursing and other bodily functions related to sex matters is the only way to guard children against the vulgar, demoralizing misstatements that come to the ears of very young children.

The Vocabulary for Family Use gives simple, correct and adequate definition of bodily structures, functions and conditions. The parent must make her choice of using the language that is dignified and correct or a home code of baby talk or the unwholesome language of the street. The arguments for using with children from the beginning the correct biologic and physiologic terms are well and forcibly set down. The vocabulary is presented in two sections, the first for children before they enter the formal school group—approximately up to 6 years of age—and the second for children up to the junior school period.

There are many references in both booklets to the recent literature on sex and the selection of these is admirable.

Few as sane, wholesome and helpful discussions of sex hygiene have been printed. Parents will find them among the most helpful books of their kind.

An edition might well be printed in which the two articles are bound together, with a cover more substantial than paper. J. M. D.

THE LONG TREK

By Richard L. Sutton, M.D. Cloth. Price, $5. Pp. 347. The C. V. Mosby Company, St. Louis, 1930.

TWO doctors, father and son, who took a holiday trip into the big game country of East Africa, equipped with guns, cameras and a lively interest in the inhabitants, have written an interesting account of their journey.

Between engagements with lions, tigers and elephants, the Suttons gathered much information about the native tribes. With the aid of the British government representative in the district, Dr. Sutton the younger made a careful study of a tribe in Tanganyika called the

Wambulu. In a well organized chapter he describes their living conditions and records some of their strange customs. One of these is the use of scars as ornamentation. Parallel rows of small round scars adorn the breasts and abdomens of both men and women. Practically all have their ears pierced for ornaments of outlandish size and shape.

Keeping well on a nine months' trek is a matter requiring considerable care and forethought. The experiences of these two doctor-hunters should therefore be valuable to prospective travelers into that remote and unfamiliar territory. They tell in detail how they met the problems of climate, food, water and disease-carrying insects and returned without serious mishap.

A profusion of excellent photographs made by the hunters, augments the written records of the trip, which was made in the winter of 1929-1930. L. S.

THE NEW HEALTHYLAND

A Collection of Health Stories for Children. Pp. 168. Price, $2. Hygeia, American Medical Association, Chicago, 1930.

ONE little girl wrote that she had worn out three copies of the first Healthyland. Such devotion to health teaching led the publishers to consider a second volume, and now Healthyland No. 2 is continuing these missionary efforts among the young, converting them to spinach and carrots, to 8 o'clock bedtimes and daily ablutions.

In fact, rumor has it that not a few adults have abandoned sins against stomach and system in order that they may not be embarrassed in the sight of their children embarked upon the good health life. Even artists who have made drawings for the health rhymes and stories have confessed either to an attempted revision of living habits or an alarmed conscience over their physical neglect.

Healthyland No. 2, like its predecessors, is made up of stories, verses, plays, letters and other health material for children which have appeared in HYGEIA from month to month. It contains in addition a complete book for children, "Jimmy and Mr. Germ," the children's serial in HYGEIA written by none less than a Yale professor and physician Dr. Howard W. Haggard.

Most of the contributors to the New Healthyland are authors of children's books of wide sale. Several of them sold their first stories to HYGEIA and on them founded their reputation as tellers of health tales. The stories concern every possible health habit, even to "Peter Rabbit Builds a Fire," a charming story the moral of which is to go regularly to the toilet.

The seven plays are for children of elementary or junior high school age and range in size of cast from five characters to a whole room full of children.

Letters from France, Holland, Spain, Italy, Mexico, China, Japan and Australia break the news to self-satisfied little Americans that children in other lands have health customs well worth emulating.

Although some schools and health organizations order Healthyland in thousand lots, one copy is a proper Christmas gift in a family with children sized from 1 to 12. M. W.

DOCTORS AND SPECIALISTS

A Medical Revue with a Prologue and a Great Many Scenes. By Morris Fishbein, M.D. Pp. 118. Price, $1. Bobbs-Merrill Company, 1930.

DR. FISHBEIN is editor of *The Journal* of the American Medical Association and of HYGEIA, and author of numerous books on popular medical subjects.

In this small volume he turns his attention to the superspecialists, he twits at their little conceits and laughs at and with them. Medical jokes abound, and if there are some you have already heard there are many others that are new-born. Illustrations by Dan Layman are every bit as funny as the text, but what this reviewer wants to know is, Is Layman his real name or is this just another case of the Layman looks at Doctors? M. W.

HUMAN BIOLOGY AND RACIAL WELFARE

Edited by Edmund V. Cowdry, Ph.D. Cloth. Price, $6. Pp. 612. Paul B. Hoeber, Inc., New York, 1930.

DR. COWDRY, professor of cytology, Washington University, St. Louis, has gathered together here a collection of papers from twenty-eight men eminent in their special fields. The aim is to give the student a broad grasp of the problems of human life and the methods of attacking them which will break down the barriers of intolerance and narrowness of view which specialization breeds.

In the first part of the book special attention is given to the conditions of possible life, somewhat similar to ours, on other spheres. In "The Origin of Man," his evolution is shown by describing the stream of life on our planet leading up to the races of man or the subdivisions of the human race. The structure of the human body and the way it performs its functions is described in the section on "Man as a Physiological Unit." Studies in physiology and chemistry give information concerning the glands and the diet that has a direct influence on life and health. In the section devoted to "Environment" is shown the effect of climate, weather, food, urban and country life, adjustment to certain diseases, the relation of science to industry and the influence of education. Finally, the future is discussed on the basis of facts presented earlier and of studies of the tendencies of evolution in man and other animals. The inheritance of disease, a consideration of population growth, the mingling of races and the question of purposeful improvement of the species are also considered.

The intelligent reader will get a compendium of knowledge of the present state of learning in the special sciences and their relation to man and the possibilities of his further development. C. P. F.

THE STORY OF SAN MICHELE

By Axel Munthe. Pp. 530. Price, $3.75. E. P. Dutton and Company, New York, 1929.

NOT many books are best sellers a full year after publication date; in fact most of the 1929 output is all but forgotten. Not so with Dr. Axel Munthe's "The Story of San Michele." First published in July of last year, the book today has more readers than before; the bookstores can scarcely keep up with the orders.

The story of this Swedish physician is adventurous, dramatic and romantic. His is a personality that finds excitement even in dull places. Longing always for the peace and rich Italian beauty of San Michele, his island home on Capri, Dr. Munthe spent a life in the thick of things. From Paris to Lapland, from Lapland to a cholera epidemic in Naples, back to Paris to work with Charcot at the Salpêtrière, in Rome as a fashionable practitioner, Dr. Munthe adventured hither and yon and wherever he went the scene yielded tales worth telling. He admits, however, that much of the book represents the borderland between romance and reality.

Says Dr. Walter C. Alvarez in his new book, "Nervous Indigestion," "I doubt if any one could read the book [The Story of San Michele] without being impressed with the fact that for a certain type of practice the physician must be born; he cannot be made of ordinary clay." Dr. Munthe's huge, fashionable practice—chiefly among nervous women—resulted from his own vigorous personality and from his rare understanding of how great is the psychic and emotional basis of many disorders of the body.

Some of Dr. Munthe's therapy is open to criticism. He shifted his diagnosis from appendicitis to colitis to keep up with the fashion, but on the whole his philosophy of life is a good one. His book makes ready reading. M. W.

HEALTH *and the* SCHOOL

Edited by J. Mace Andress, Ph.D., 67 Clyde Street, Newtonville, Mass.

Health Problems in December

DECEMBER offers special health problems to the teacher and school administrator. In contrast to the other months December seems to have more than its share of problems. It is a month in which pupils, teachers, parents and the community in general tend to neglect the most obvious rules of hygiene.

December with our great Christmas festival should be the month of greatest joy, but unfortunately much of the pleasure of this holiday period is cut short by illness and overfatigue, so that pupils and teachers in many cases return to school in January in a worse physical condition than they were at the beginning of the vacation. It would be no exaggeration to say that the whole of this month is largely devoted to getting ready for Christmas or to its actual celebration. A graph made of the number of office calls of the family physician and also the number of calls he makes at homes would probably show a sharp curve upward. Is there anything that the school can do about this situation? Here are a few suggestions that may help:

1. Reduce the strain of school. There is probably no time in the year in which school pupils are so subject to fatigue. The whole community is under strain. There are presents to be made or bought and sent. This means mingling in large crowds and danger from infection from much coughing and sneezing. Children stay up later at night to help with Christmas preparations in addition to doing their school work. Usually there is the pressure of an additional number of parties and social engagements. It is not strange that fatigue should be cumulative, making infection much more likely.

Mingling in large crowds increases the danger of infection.

The school often does not have imagination enough to understand what is happening and with indifference or with the hopeless fatalism that the situation has always existed and always will makes no effort to face its problems. There are several things that the school may do to remove the strain. One is to make sure that the pupils are having less school work rather than more. Often the teacher of every subject in the high school finds that just before Christmas is a necessary time for an examination. In a properly supervised high school in which the principal has a schedule arranged for examinations this would be impossible. In those grades in which few if any special teachers are employed examinations will not be a problem. But in the lower grades, even down as low as the kindergarten, there may be overstimulation and excitement in connection with Christmas.

Every school should celebrate Christmas simply and effectively. It is not unusual for a school to contribute much to the general fatigue by elaborate school Christmas celebrations in which the pupils participate.

2. Plan to have instruction concerning the cause, prevention and cure of colds. Since colds are among the most common maladies of late December and are the result in large measure of irregular and unhygienic living this is an appropriate time for such instruction. Each teacher will need to be the judge of the amount of information to be presented, depending on the past instruction of the pupils.

3. Give special instruction and training in relation to candy. Too many children think of Christmas as a time to satisfy to the extreme limit their appetite for candy. Candy is an incomplete food, and its indiscriminate use impairs the appetite for more substantial foods that are required for healthful living. It would be foolish to try to get children to pledge themselves not to eat candy during this month when candy is found everywhere, but it is entirely feasible to tell them that the proper time to eat candy is after meals. In this way the Christmas candy will last for a long time, and not only do no harm but have food value.

Don't plan elaborate Christmas celebrations at school.

4. Plan to have health habits carry over into the Christmas vacation. Instead of expecting that children will forget all the hygiene that they have learned during the school days of December and especially during the Christmas vacation, there should be a well formulated scheme of instruction and training attempting to carry over regular health habits, which should be the primary consideration in every course of health instruction whether it is systematic or incidental. Children tend to lose weight in December. Try to arouse in them a desire at least to maintain the weight that they have and if possible to gain. In the grades a competitive contest between two groups of the class might prove effective.

5. Get the cooperation of the parents to promote a happy, healthful December. Parents are usually willing to cooperate with the school if they can be made to see that it is for the interest of their children. In some way the parents should become familiar with the aims of the school during this December drive for good health habits. One way is through a parent-teacher association, but that alone is usually inadequate, since only a small percentage of parents attend such meetings. Another way of reaching parents is through the local newspapers. The principal of a school or the superintendent may make an appeal in this way, which will reach the great majority of parents. One of the best methods of informing parents is through personal letters. After first securing the cooperation and good will of the children in promoting good health during December, without which nothing can be accomplished, the teacher with the help of the pupils may write to the parents telling them what the school is trying to do and asking for their hearty support.

The editor of the department has looked over the growing literature on health education with much care but he finds practically nothing on what the school is doing to promote the good health of children in December. Here is almost a virgin field for experimentation. What are you going to do about it? After you have grappled with the problem and won some degree of success, perhaps you will tell the editor about your experience.

TEACHING HEALTH

(In this column will be published each month concrete examples of good health teaching. Teachers are invited to send in contributions not exceeding 600 words and preferably less to the editor of this department. Illustrations of the actual work of children will be welcomed. Contributions accepted will be paid for but no manuscripts will be returned.)

A STUDY IN BODY TEMPERATURE

"THERE'S more than one way to skin a cat," we used to say when I was a boy. There is more than one way to learn about the body temperature. The teacher or the textbook may inform the receptive pupil that the normal mouth temperature is 98.6 F., and that in health the temperature remains nearly constant under varying changes of weather and activity. The docile pupil may learn this statement. A retentive mind may hold the fact for months and perhaps use it in further study. But to most pupils it will be just another dose of information, dead and useless.

Another method of attack is to bring into class a lot of clinical thermometers. Demonstrate to the class just how the instrument is used—sterilized, shaken down, placed under the tongue, lips closed, for reading held horizontal and the mercury column observed through the magnifying ridge between the scale above and the numbers below. Then give the pupils the instruments and let each, following carefully the directions, take his own temperature. Let each pupil in turn state his reading while the others write it in their notebooks. They then compute the average. Of course, the teacher will verify any reading that seems unlikely. Facts thus obtained are interesting and vital. The pupils note the individual variation from the norm. In health we are not exactly uniform in temperature. Some sleeveless girl will take the temperature in her axilla to see if it corresponds with the mouth temperature.

Plan to have instruction about the prevention of colds.

The thermometers should not be passed around in classes. Some pupil may break an instrument and put it back in the container without reporting the accident. The following method has been found convenient for sterilizing and handling the thermometers. In a two-inch cubical block, bore two holes not quite through. One, ¾ inch in diameter, is for a long, narrow bottle of alcohol for sterilizing the instrument; the other, 3/16 inch, is for the thermometer. A little cotton in the bottom of this hole will make a cushion to protect the instrument. The blocks, each with its bottle of alcohol and thermometer, are handed around among the pupils. Any accident to an instrument is readily noted and the responsibility fixed.

In a large class some pupil may be found with a temperature between 99 and 100. His temperature should be taken several times during the day and several days in succession. If he is found to have too high a temperature he should visit his doctor and find the cause. This class exercise may be the means of discovering disease and lead to its proper treatment.

When one feels cold, is the temperature of the body lower? When one feels warm, is the temperature higher? A thermometer test will show how little the mouth temperature changes with changes in the skin temperature. Our feeling of heat and cold depends on the temperature of the skin, which is determined largely by the quantity of blood circulating through it. These conclusions the pupil makes for himself as he observes the changes of color in the skin as the warmth comes with rubbing and percussion.

When we feel warm from extensive oxidation in vigorous activity, does the temperature rise? Let some pupils take their temperatures, then run around the block and immediately take their temperatures again. If the reading is two or three degrees below normal let the pupils wait five or ten minutes, then try again. Will they find the explanation of the low temperature in the fact that the mouth was so cooled by breathing through it that several minutes were required to restore it to normal? The pupils will probably be surprised to see how little the mouth temperature is raised by an activity that made them feel so warm and their understanding and appreciation of the temperature regulating function of the skin will be materially enhanced.

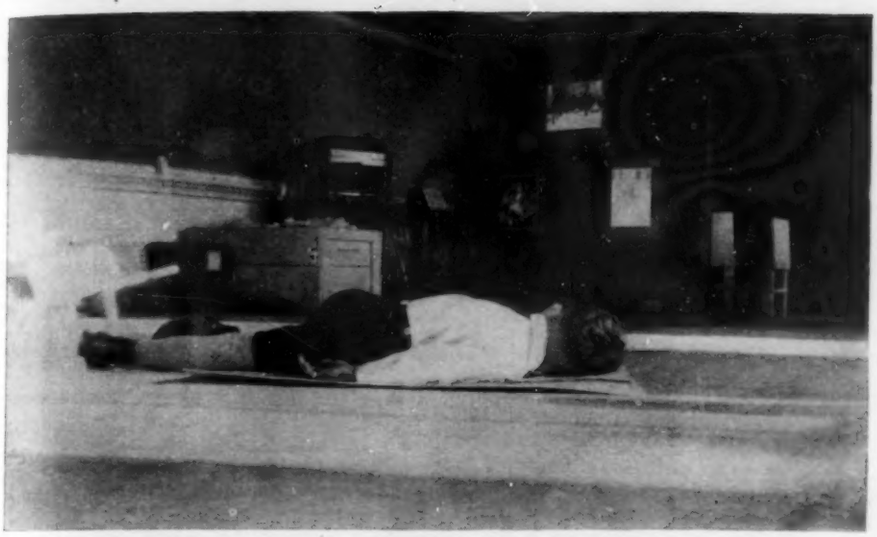
This method of studying body temperature, besides acquainting the pupil with the actual facts and allowing him to make his own generalizations, makes him familiar with the thermometer and encourages him to use it in looking after his health and that of his friends.

R. E. BLOUNT,
Marshall High School,
Chicago, Ill.

LEARNING TO RELAX

"CLYDE is showing us the best way to rest." This picture, enlarged and mounted on a poster with the slogan, "We know how to relax. We rest quietly every day," served as an incentive to all in our kindergarten last year; for, of course, every one wanted his name posted below the picture.

Realizing the need of relaxation in the overstimulated life of the average child, we decided to see how much could be gained in the ten-minute rest period provided on our schedule. P. T. A. mothers made us a large supply of clean mats,



Clyde knows how to relax properly.

The kindergarten imitates Clyde.

using several layers of newspapers covered with heavy wrapping paper. Each child had his own mat with his name and appropriate symbol on the right side, which was always folded in so that the clean side never touched the floor.

With the cooperation of a member of our hygiene department, who had become interested in our problem, we observed the children as they rested to see which ones relaxed most thoroughly. Although two positions were suggested the one shown in the picture was adopted as it seemed to produce the best relaxation. In this the child is lying face downward with head turned to the left side, the right leg out straight and the left leg slightly bent, throwing most of the weight on the right side.

After the preliminary training and adjustment which is always necessary with little children, they came in from outdoor play, placed their mats on the floor, all taking this restful position with faces turned away from the light. Drawn window shades and a little soft music helped to calm most of the group until gradually the wiggling and squirming decreased day by day. Although only occasionally they went to sleep they seemed to relax completely. When, at the end of the year, the kindergarten participated with the whole school in a play day, they rested for half an hour before going to the playfield. Excited as they were over the prospects of the picnic, more than half of them went to sleep. It seemed to me as if at last, after months of repetition, this period had become a habit. We wish that it might carry over into the home and become a part of the daily routine, and we should like to feel that its influence may even extend into later life, so these children may be more happy and efficient, having acquired the art of relaxation.

WINIFRED CHAMBERLAIN,
Seattle, Wash.

THE HEALTH COUNSELOR IN HIGH SCHOOL

THE development of health education in elementary schools is bringing a more health conscious group of pupils to high schools and it becomes a matter of definite responsibility to carry the health ideal over into the school lives of these pupils.

This has been done through correlation with home economics, civics, science, history, English, art, physical education and other subjects in high school.

Three years ago in Newton High School, Newtonville, Mass., a beginning was made in the department of health and physical education, the aim of which was to make practical use of health knowledge in high school. The plan was to develop health counselor work through this department. For this purpose a public health nurse was appointed by the school committee as an instructor in hygiene.

The Red Cross course in home hygiene and care of the sick, which has been offered since 1913 in the home economics department, was made an elective subject for junior and senior girls in other departments; the nurse instructor continues these courses.

The freshman class is divided into groups of twenty and, according to a regular schedule, these groups are given a lesson in hygiene during a physical education period. The instructor meets a different freshman group each day and from ten to twelve special hygiene lessons are given to the entire class during the year. This contact provides valuable opportunity to associate the health ideal and physical education. Since health examinations are conducted by this department, many group health lessons may be developed using the health examination as a basis for selection of topics.

From time to time, the office training department arranges with the instructor for special hygiene talks, which are planned to meet the health needs of the business girl. These lessons are given to small groups in office practice periods.

The object of all group and individual contacts is to make use of the health attitudes acquired by the students in the grade schools, and to develop in them a sense of personal responsibility toward their individual health needs.

The class work occupies from twelve to fifteen periods weekly. The remainder of the time is free for conference work, which has grown from the following sources.

The rest room provides many opportunities for practical application of health education principles. In Newton High School it is

now well understood that students who find it necessary to make frequent use of the rest room have a health problem to solve and it becomes the duty of the health counselor to help with this problem. As a result, many defects have been corrected, chief among which are eye defects causing headache. Health habits referring to rest, sleep, proper breakfast and elimination have been improved in many instances.

Individual contacts are made in many other ways and form a basis for constructive follow-up health work. For example, all dismissals from school due to physical causes are made by the counselor; all absences from school are noted by her and followed up when indicated. The results of all health examinations are referred; excuses from gymnasium work for physical reasons are made and adjusted by her. Subject teachers frequently send students who are doing poor work to ascertain if there is any physical cause. Attendance officers use this service in dealing with frequent absences having a physical basis. Often the students seek the advice of the counselor in matters of physical and mental health. From all these sources the counselor gains a fair knowledge of health needs of individual students and of the school.

Follow-up work is done in the usual manner through the cooperation of the students, parents, homeroom teacher, the visiting teacher and outside health agencies. Within the school, health adjustments may consist of plans for special rest periods, midmorning lunch, rearrangement of program, audiometer tests or special posture and corrective gymnastic work. Outside of school, arrangements may be made with the home for surgical or medical care through the family physician or clinics. Financial aid is provided when necessary by the Junior Red Cross and Student Aid Fund.

First aid and care of emergencies are a part of the regular work of the counselor.

It is interesting to note that the counselor's advice is sought by students desiring to enter schools of nursing. While the latter may not be termed health education in the strictest sense of the word, its future development may be favorably affected if superior students can be encouraged and prepared to enter highly accredited schools of nursing. They become the next generation of teachers in fields of health education, which demand nurses adequately prepared to do educational work.

Although accomplishments are difficult to measure, a few concrete examples may serve to demonstrate

how the service functions. The students are interested in meeting health requirements for positions or for entrance to college and other institutions for advanced work.

The Red Cross course in home hygiene and care of the sick has been made use of by many of the students at home. Knowledge of first aid has been an asset to some students in office positions. Information on child care is also useful to girls assisting with the care of children after school hours.

An instance of a boy who was referred to the counselor by a history teacher is only one of a number of cases in which correction of physical defect, even in high school, improves school work.

John lost several weeks of school when he had influenza. About three weeks after his return to school in late February, his history instructor referred him because he was failing in this subject. The instructor was puzzled to know the cause of the boy's loss of interest. He said he could not make out whether the boy was growing deaf or lazy. An audiometer test showed he had 30 per cent loss of hearing in one ear and 27 per cent loss in the other.

Upon inquiry the counselor found that, although John had had slight difficulty at intervals before his attack of influenza, the trouble had greatly increased since his illness. Telephone conversation with the mother revealed the fact, that, although she had noticed some trouble she was "giving nature a chance" and waiting to "see if the teachers at school noticed anything." Since she had in a subconscious way put the responsibility on the teachers, she accepted the suggestion that nature had had its chance and that now it was time for action. The boy was taken to a specialist and operation planned for early summer. Meanwhile he was given every opportunity to complete his year's work. He faced his problem; teachers gave him the advantage of front seats and special attention. He completed his grade, correction was made early in the summer and an audiometer test during the current year showed normal hearing in both ears. His entire mental attitude has improved and his work has improved.

Significant excuses for absence such as rheumatism, headache, tonsillitis and toothache have been followed up and physical adjustment has been made.

Many conferences, particularly with girls, offer opportunity for presenting normal mental attitudes toward fundamental life problems.

The plan for health counselor work will differ in secondary schools according to the special needs of the school. However, the duties are so varied as to make constant practical application of all the principles of health education.

CHARLOTTE M. SIMON, R.N.,
Newton High School,
Newtonville, Mass.

NEW HEALTH BOOKS AND TEACHERS' MATERIALS

THE modern movement in health education asserts that a healthy mind is as necessary as a healthy body if not more so. Is it possible for parents of average education and intelligence to understand some of the simple facts and principles of mental hygiene, one of the latest developments in the field of psychology and health? This question was evidently a challenge to the editors, and they undertook to answer this challenge through the pages of this sound and interesting book, "The Healthy-Minded Child."[1]

Instead of plunging into the midst of complicated theories as to what a healthy mind is and how it may be developed the reader is presented with cases and the successful way in which they were treated and gradually realizes that he has acquired some valuable knowledge on mental hygiene. In the first few pages, for example, one meets Amy:

"A little tiger she was, and had been almost from the cradle. It was a fight to get her to go to sleep, a fight to get her to eat, a fight to refuse her anything she took a fancy

1. The Healthy-Minded Child. Edited by Nelson Antrim Crawford and Karl A. Menninger Price, $1.75. Pp. 197. Coward-McCann, Inc., New York, 1930.

to. In every conceivable way she seemed to her parents to do the perverse, the disobedient, the defiant thing. She would throw her playthings on the floor or in people's faces, she would trample upon flowers or other children's fingers, she would daub jam on her sister's dress or cut holes in her father's coat. Her parents would find water overflowing, drawers ransacked, books torn, bric-a-brac destroyed."

Such a description whets the reader's appetite and he wonders how Amy won a healthy mind. Amy's adventures as well as those of many other children are described in this readable volume to which several experts of national and international reputation have contributed chapters.

Parents and teachers will appreciate this suggestive and useful contribution to the subject of mental health.

MISS PRITCHETT is to be congratulated on the revision of her interesting and practical bulletin on "Child Nutrition."[2] It not only presents in a condensed and readable form the latest theories on child nutrition but also contains several valuable pages on the school lunch, menus and the food budget. These topics are treated in a practical way. For example, in the discussion of the school lunch the reader is told specifically just what things should not go into the school lunch box and also what may be included. This bulletin would be of inestimable value in guiding the dietaries of children and it might also be used by the children themselves to supplement some good textbook on health.

The reviewer hopes that the commonwealth of Pennsylvania has an appropriation large enough that every grade teacher in the state may have a copy and also that there may be a few left over for HYGEIA readers who care to ask for one.

UP UNTIL 1492 tobacco was unknown to the civilized world. In that year it was discovered by Columbus. He found the natives of the New World using it by a peculiar method. "They had a hollow stick in the shape of a Y; the two upright limbs of this Y they placed in their nostrils, while the stem of this Y was placed in the smoke of burning tobacco. They inhaled the smoke directly into their nostrils."

Gradually the use of tobacco became prevalent in Europe. In England, as is well known, tobacco was popularized by Sir Walter Raleigh. The habit has continued to spread and apparently is still spreading. Since the World War smoking among women has become popular. The expense of the tobacco habit has become enormous. In 1912 in Germany the smoking bill of the nation was greater than the cost of the regular army. In the United States in 1921 more than $1,500,000,000 was spent for cigarets. The fire losses from the careless use of tobacco amounted to $30,000,000. In the face of such figures one might properly question whether tobacco is worth what it costs. Is the habit harmful?

Dr. Mendenhall has attacked this subject[3] without bias and apparently with the purpose of seeking for the truth. He says that the use

of tobacco is a habit acquired with ease. As to whether tobacco is useful or otherwise there is difference of opinion.

"If a man or woman uses tobacco in moderation he or she may be as happy and free from disease as a neighbor who does not indulge," he declares. "If a man or woman uses tobacco in excess, he or she may suffer disorders or may die sooner than a neighbor who does not indulge." It is a question of individual differences as to what constitutes moderation.

Dr. Mendenhall considers somewhat in detail the effect on the human body of the excessive use of tobacco. He finds no evidence that tobacco stunts the growth in spite of common belief. Although many investigations indicate that students who smoke have a lower scholarship than those who do not indulge in the habit, these studies have not been made with scientific accuracy. Then, too, the smoker is likely to have more distractions, since he may be more sociably inclined. Smoking apparently has no effect on the course of pregnancy or upon the offspring, in Dr. Mendenhall's opinion.

Everybody agrees that young children particularly should not cultivate the tobacco habit. Every adult must decide for himself whether its pleasures outweigh its possibilities of evil. We need many more years of accurate observation to know its effect on health and long life when used in moderation.

FOUR excellent new booklets on health[4] have the same high standard as others issued in the past few years by the Metropolitan Life Insurance Company. They will prove helpful for adults and of interest to teachers. The booklets that deal with heart disease, infantile paralysis and rheumatism have an optimistic point of view and inform the patient as to what he should do to adjust himself to his malady.

In a discussion of the heart, for example, we read that "Few people realize the wonderful work that they can get from an impaired heart by using it skilfully and discreetly. Dr. Kane, the famous Arctic explorer, had his first attack of heart trouble when he was a young man studying engineering. Repeated attacks led him to give up engineering for the study of medicine and law, and later he entered the United States Navy as a surgeon. In spite of his handicap he was the commander of the most important Arctic expedition of his generation, and, during his life time, visited Mexico, Cuba, Brazil, much of Asia and a large part of Africa." Concrete suggestions in regard to giving the heart a chance then follow.

OHIO has a carefully planned course of study on health and physical education.[5] Many of the paragraph headings of this syllabus are stated in the form of questions which are a challenge to the reader: What is health education? What is physical education? What is the chief function of the school health examination?

The work in health and physical education is carefully planned for each grade and minimum essentials are clearly stated.

2. Less Waste, Better Health. By Katherine A. Pritchett. Pp. 38. Commonwealth of Pennsylvania, Department of Welfare, Bulletin No. 22, revised. Harrisburg, Pa.

3. Tobacco. By Dr. Walter L. Mendenhall. Price, $1. Pp. 69. Harvard University Press, Cambridge, Mass., 1930.

4. Give Your Heart a Chance; Helpful Suggestions About Infantile Paralysis; What Is Rheumatism? The Home That Is Safe. Metropolitan Life Insurance Company, New York, 1930.

5. Health and Physical Education Series of the State of Ohio Department of Education. Vols. I and II. Prepared under the direction of John L. Clifton by Clifford Lee Brownell, reviewed by D. Oberteuffer. Pp. 165 and 176. 1930.

Questions *and* Answers

Treatment for Varicose Veins

To the Editor:—In HYGEIA for April, 1929, in an article on varicose veins, by Kilbourne, it was stated that three ways of treatment are possible. One is the operation in which the veins are tied and cut out, another is injection, which causes the veins to dry up and disappear, and the last is the use of a rubber stocking. Without any veins how could the blood circulate through the body? Is there anything to substitute for the veins?

P. H., Nebraska.

Answer.—While in general the arteries convey the blood from the heart to various parts of the body, the blood passing first into the arteries, then into the capillaries and back to the heart through the veins, there are numerous communications, or anastomoses, between the smaller arteries in most parts of the body and also between the small veins.

When an artery or vein conveying the blood to any part of the body is obliterated by ligation, injection or removal of a portion, the small communicating branches or other vessels become enlarged and replace in the circulatory system the vessels destroyed. This is known as collateral circulation.

Blood vessels are like other structures of the body, in great excess of the needs of the body, thus providing what has been called a margin of safety. For this reason arteries or veins supplying considerable areas may be obliterated without seriously interfering with the circulation in the parts of the body supplied by these vessels.

Low Blood Pressure

To the Editor:—Please tell me what causes low blood pressure and how to bring it up to normal. The doctor told me to take things easy for a while because my blood pressure is low, 116. How high should it be? My weight is 132, height 5 feet 4 inches, and I am 35 years old. In November it will be two years since I gave a pint of blood for transfusion. I had previously given a pint. Could this cause low blood pressure?

A. F., New Jersey.

Answer.—Low blood pressure is usually the accompaniment of what is popularly spoken of as a "run-down condition." When it is an accompaniment of a serious condition of heart or blood vessels, the other symptoms are evident and are of much more importance.

One hundred and sixteen millimeters is not a low pressure for a woman of 35; we should regard it as well within normal range.

It is unlikely that the transfusions for which you supplied blood two years ago had anything to do with the low blood pressure.

Transmission of Syphilis

To the Editor:—Is it possible for one to become infected with syphilis or any of the venereal diseases by sharing a bathroom with others who live in an apartment house and who might be infected? I have an apartment house and several children, which is the reason for my question.

S. E. T., Texas.

Answer.—It is possible for syphilis to be conveyed by objects that come in contact with the mouth or other parts of the body in the first stages of this disease, and sometimes in later stages in patients who have been improperly treated. The use, therefore, of towels, eating utensils, napkins and similar articles by those who are not infected involves a danger of transmission.

Books on Pyorrhea

To the Editor:—Will you please give me the names of two or three books devoted to the subject of pyorrhea, and written for the public? H. S. J., Michigan.

Answer.—No authoritative handbook has ever been written on this subject for the public, and it is not likely that anything really authoritative will ever be written, for the reason that pyorrhea is not always caused by the same thing, and even the scientific dentist is frequently puzzled by its manifestations. For any one to try to diagnose and treat this disease without direction by a dentist is to invite disaster.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Near-Sightedness

To the Editor:—If one had normal vision 20/20 up to 18 years of age and acquired near-sightedness, could the eye ever be brought back to normal again? What is the ciliary muscle of the eye? Does wearing glasses improve near-sightedness?

E. A. G., Illinois.

Answer.—The eye that is near-sighted is rarely changed back to normal. The ciliary muscle is the muscle that surrounds the margin of the lens and attaches the capsule of the lens to the inner side of the eyeball. When it contracts it lessens the pull of the elastic capsule and allows the lens to become more curved, especially on its anterior surface. When it is relaxed, the suspensory ligament, as it is called, flattens the lens. Wearing of glasses corrects the error of vision, but does not change the shape of the eyeball.

Throbbing Sound in Head

To the Editor:—Will you kindly let me know if the following medicines are safe to take for a toxic condition due to excessive use of chewing tobacco—Sal Hepatica, BiSoDol, Tanlac, Jadd Salts? I have a throbbing sound in the head near the ear and a pain in the shoulder, both on the left side. The doctors assert that there is nothing wrong with the head but that the condition is due to the use of tobacco.

L. M. E., Pennsylvania.

Answer—The throbbing sound may or may not be due to the use of tobacco. We certainly would not advise the taking of the drugs mentioned. Three of them are laxatives and the fourth is simply an alkali like soda. These should be taken only on the advice of a physician and under his direction.

Goat's Milk vs. Cow's Milk

To the Editor:—Please advise me if there is any advantage in the use of goat's milk instead of cow's milk?

W. S., New Mexico.

Answer.—The apparent advantage of goat's milk, especially for children, is due to the fact that goats do not suffer from tuberculosis as frequently as do cows. This is a matter of minor importance, however, when pasteurized or certified cow's milk is used.

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